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ETHNIC FERTILITY DIFFERENTIALS IN GHANA AND THEIR CONSEQUENCES

BY

ISAAC ADDAI ©

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled ETHNIC FERTILITY DIFFERENTIALS IN GHANA AND THEIR CONSEQUENCES submitted by ISAAC ADDAI in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY in DEMOGRAPHY.

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TO MY MOTHER, AKUA MANSAH AMOABENG

without whose tremendous effort I would not be where I am today.

ABSTRACT

This research explores an analysis of fertility differentials in Ghana in terms of ethnicity using data from the 1988 Ghana Demographic and Health Survey. The data are divided into current and completed fertility. To assess the likely impact of socioeconomic mobility on reproductive behaviour among the cultural groups (the Twi, the Fante\ Other Akan, the Ewe, the Ga-Adangbe and the Northern groups), a reference group has been constructed using husband's education and wife's work status. This group is labelled elite group in this research.

The correlates included in the multiple regression model are net marital duration, age at first birth, age of respondent, current and childhood places of residence, respondent's education and husband's occupational status. The dependent variable is children ever born.

In both age cohorts, the reference group has lower fertility. On average, the fertility difference between the ethnic and the reference groups in Ghana is not substantial in magnitude among the young population, however substantial differential exits in the case of the old cohort. For the young reference and ethnic groups, age at first birth and respondent's age are the most important determinants of fertility. Other factors also have significant effect depending on groups' position in the country.

Net marital duration, age at first birth and current place of residence emerge as the main determinants of fertility among the old cohort. Husband's occupational status positively affects fertility among the young reference group. Overall, the differences in fertility levels in Ghana is a function of a mixture of political, cultural, social, economic conditions perpetuated by ineffective government policies and programs which various groups have to cope with. Socioeconomic mobility is likely to effect a reduction in fertility among all the ethnic groups.

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Chapter I
INTRODUCTION

A. Statement of the Problem

A study of ethnic fertility differentials is essential in understanding the dynamics of human reproduction, especially in transitional societies. Like any social behaviour, reproduction or the patterns underlying it cannot be explained without placing it in the context of human culture. Much of the literature, as exemplified by the works of Caldwell et al (1991), Goody (1990), Lesthaeghe (1989), Page (1989), Caldwell and Caldwell (1987) and Frank (1987), has emphasized social organization including ethnicity, as a key force behind high fertility in Sub-Saharan African countries.

Ghana's Total Fertility Rate (TFR) of 6.4, masks variation between the various major ethnic groups (Ghana Demographic and Health Survey (GDHS), 1988; Gaisie, 1975; United Nations, 1972). Questions which arise in this connection are: Through which mechanism does ethnicity act on fertility in Ghanaian society? Under what conditions does ethnicity alter fertility behaviour? What aspect of ethnic group identification affects reproductive behaviour and in what direction? Attempts have been made to address some of the above questions in Ghana. However, the studies have been more descriptive than analytic (Gaisie, 1975; United Nations, 1972; Caldwell, 1967). The present research is set to overcome this shortcoming by investigating determinants and consequences of fertility across the five major ethnic groups in Ghana.

Ethnic fertility differentials are conditioned largely by social and economic disparity among groups. For instance, the United Nations (UN) figures show that the crude death rate of 18 per 1000 in 1971 declined to 12 in 1991, and infant mortality dropped from 156 per 1000 in 1971 to 86 in 1993. However this plummeting mortality due to improvements in medical and sanitation facilities has not been felt equally among all the ethnic groups (Ministry of Health, 1990; Akoto and Tabutin, 1989). Akoto and Tabutin (1989) have documented differential infant and child mortality in the range of 74 to 153 among the major cultural groups in Ghana. The ethnic differentials may be attributable in part to different attitudes to illness and nutritional practices, access to and use of modern health services, and dependence on modern versus traditional healers. However, as World Bank (1994:15) has pointed out "they are also due to schisms among ethnic groups that produce unequal access to social and economic opportunities."

Available figures indicate that whereas the country has been experiencing declining mortality, the birth rate has been almost stable around 32 per 1000 (UN, 1971-93). The outcome of the gap between births and deaths has been a substantial increase in population. The population has increased from 9.3 million in 1971 to 12 million in 1981 and in 1993 it stood at 16.4 million, with variation among the ethnic groups.

The age distribution characterises Ghana's population as young. Almost 45 percent of the population is under 15 years and 51 percent is between 15-64. The female mean age at marriage is 17.8 for rural and 18.9 for urban people. Contraceptive prevalence is about 13 percent (World Bank Tables, 1991; UN Report, 1990). All the figures point to the fact that the situation in Ghana favours a continued rise of population.

Ghana's population growth rate of 3.2 percent per annum and total fertility rate of 6.4 are high in absolute terms, and high given the country's current economic situation. According to UN projections, the population is expected to double in 22 years, and is expected to be 26.9 million by the year 2010 and 35.4 million by 2025 (UN, 1991). The situation analyzed in the context of Ghana's total area of 239,000 sq km reveals possible social, economic and political ramifications. In a country where 68 percent of the population lives in rural areas where tilling the land is the means of livelihood, it is obvious that this trend of population increase calls for an understanding of population growth in an attempt to assess its social, economic and political consequences.

The most prominent characteristic of Ghana is its urban and rural disparity (Brown, 1986). This residential disparity is due to unequal distribution of social and economic amenities such as health, education, safe drinking water, etc. Out of the

68 percent rural population, 66 percent are women who have no education. Whereas 93 percent of the urban populace have access to safe drinking water, only 39 of their rural counterparts have such access. Access to health is skewed in favour of urban residents, 92 percent against 45. Population per physician is about 20,446; however such a number is much more skewed in rural areas. Also whereas 64 percent of the urban residents have access to sanitation, only 15 percent have such access in rural areas (UN, 1990).

Due to residential socioeconomic disparity, migration of educated youth to cities has been phenomenal. This has led to deterioration in urban living conditions. The urban biased development which characterises Ghana is a fundamental one and is embedded in the social structure itself. The centralized nature of the colonial and the post colonial administrations has stifled regional and district initiatives and has also made the urban areas the source of the supply system.

Given the high caliber of the urban population and generally high social and political positions to be found in urban areas, urban residents exert political and economic pressure on the government to get what they want. Unlike urban residents, rural people tend to be less educated and geographically remote from the centre of activity. Also they tend to be less well organized and less vociferous and therefore less influential in their demands. Rural areas are characterised by poverty and deprivation which go a long way to influence their reproductive behaviour.

The social and economic disparity between the rural and the urban residents has ethnic variation. Some of the ethnic groups by their regional location tend to be relatively urbanized and have access to services such as hospitals, education etc. as compared to other less urbanized cultural groups. Therefore, while urban and rural difference in social behaviour is prominent, equally impressive is the variation among the major cultural populations. For any aspect of life, the gap between ethnic groups is pronounced. Hence fertility levels and the variation among the various ethnic groups may have been shaped directly and indirectly by the rural-urban disparity in social and economic characteristics.

B. Relevance of Ethnicity in Fertility Studies

The study of ethnicity although complex, is important for understanding the dynamics of human reproduction in pluralistic societies (Berelson, 1975). The relative importance of cultural variables and especially ethnicity in the explanation of fertility differentials has been accepted after decades of relative neglect. For instance, Coale and Watkins (1986) in their European Fertility study have reported that group characteristics such as religion, language and others account for variation and change in fertility, over and above that accounted for by the more traditional demographic variables such as mortality, urbanization, income and industrialization. There are several reasons why ethnicity is important and meaningful for investigating differentials in fertility behavior in a country (Cleland and Wilson, 1987; Caldwell and Caldwell, 1987; Preston, 1986).

First, ethnic and racial groups exhibit substantially different fertility behavior in many countries. For example, ethnic differences in fertility have been reported among the Whites (Anglos), the Blacks, the Chicanos, and other ethnic groups in the United States (Westoff and Ryder, 1977; Sweet, 1974; Johnson, 1979; Lee and Robert, 1979; Jiobu and Marshall, 1977). Differences in fertility have also been reported, among British, Jewish, Germans, Aboriginals, and other groups in Canada (Henripin, 1972; Kalbach and McVey, 1979; Trovato and Burch, 1980; Trovato, 1981; Halli, 1987). In the African context, the story is no different. Caldwell (1970) has found differences in fertility between the Bantus (Africans) and the Whites in South Africa. Similar differences have been observed among the major ethnic groups in Ghana (United Nations, 1972:7; Gaisie, 1972).

Secondly, ethnicity though not based on socioeconomic differences nevertheless has different social, economic and political consequences for the population involved in many countries (Halli, 1987; Tan, 1981). In Ghana, ethnicity has affected access to political and economic power in such a way that there is a perpetual hidden animosity among groups and, hence social prejudice and tension.

Thirdly, an understanding of ethnic differentials in fertility behavior in Ghana will help in the formulation of appropriate population policies and programs, particularly in the context of increased efforts by international donors to target their family planning and reproductive health programmes at sub-national areas and groups.

C. Research Objectives

The aim of this study is twofold. The first is to explore the determinants of ethnic reproductive behavior in Ghana. The second is to assess the likely impact of socioeconomic mobility on the reproductive behavior of the various cultural groups. This research borrows and builds on three hypotheses, namely: Characteristic, Minority Status and Particularized Ideology hypotheses which have guided ethnic fertility differentials studies in the United States and Canada, Europe, Australia and New Zealand.

The focus of this research is to determine the correlates of fertility behavior among the five Ghanaian ethnic groups under study (the Twi, the Fante\ Other Akan, the Northern groups, the Ga-Adangbe and the Ewes). It also examines and compares the possible determinants of variation in fertility behavior among the five ethnic populations.

Ghana's historical and sociopolitical experience and organization preclude a sociologically meaningful majority group. There is a lack of satisfactory conceptualization as to who constitutes the standard ethnic population in Ghana, where the educated elites control political, administrative and economic power. Therefore, to assess the impact of socioeconomic mobility on reproduction among the ethnic groups in Ghana, a hybrid group based on husband's high education and wife's work status is constructed and used as the standard group. This group is labelled as an elite group. This group is purely a reference group for our standardization study. The elite population will be conceptualized throughout this study as the reference or standard group and the Twi, the Fante\Other Akan, the Ga-Adangbe, the Ewe, the Northern Groups as ethnic populations. Therefore the terms elite, reference and standard group are used interchangeably in this research.

D. Organization of the Thesis

The data for this study are from the 1988 Ghana Demographic and Health Survey (GDHS), conducted jointly by the Ghana Statistical Services (GSS) and the Institute for Resource Development / Macro Systems, INC.(IRD), as part of the Demographic and Health Survey program. The study sample consists of 4488 women aged 15-49 years in Ghana.

In chapter two there is a brief overview of the socioeconomic, cultural and demographic setting of Ghana. Specifically, the chapter describes the geographical location and climate as well as social, economic and cultural background of the five major ethnic groups studied in this thesis.

In chapter three, we review the literature and examine the applicability of the competing frameworks to Ghanaian situation. The review covers relevant literature on Africa about the applicability and suitability of the various explanations of differential fertility.

Chapter four describes in detail the data source, sample design and quality of data. It discusses the limitations of the data, measurement problems, and appropriateness of the available variables for the key concepts of the study. Major variables, both dependent and explanatory, are listed and operationally defined in this chapter. It also includes a discussion of the appropriate statistical technique and the underlying assumptions.

Chapter five presents an initial step to a multivariate analysis of the relationship between fertility, and selected social and demographic factors among the cultural groups'. Here we perform a multivariate analysis to assess the effect of selected measures of socioeconomic status (e.g., education, husband's occupation and place of residence) and demographic variables on the ethnic group's reproductive behaviour. It serves as the basis for the standardization analysis.

Chapter six presents the results of regression standardization and decomposition analysis. Specifically the chapter demonstrates the likely impact of socioeconomic mobility on the reproductive behaviour of the ethnic groups. Drawing on chapters five and six, chapter seven proposes population and social policy implications of the study based on elasticity analysis of the significant determinants. Demographic and socioeconomic short-term and long-term policies are proposed for the curtailment of fertility in Ghana. Family planning policies and their problems are also discussed.

Finally in chapter eight, we summarize the results of our investigation and the relevance of our methodological and conceptual framework. Limitations of the study are also highlighted in this chapter. Directions for future fertility research in Ghana are also discussed.

Chapter II
AN OVERVIEW OF SOCIAL, ECONOMIC AND CULTURAL SETTING

The aim of this chapter is to offer the social, economic and cultural characteristics of Ghana to serve as a background for the research on ethnic differential fertility. This is discussed as follows:

a) geographical location and climate,

b) cultural background of the groups,

c) social and economic background of the groups.

A. Geographic Location and Climate

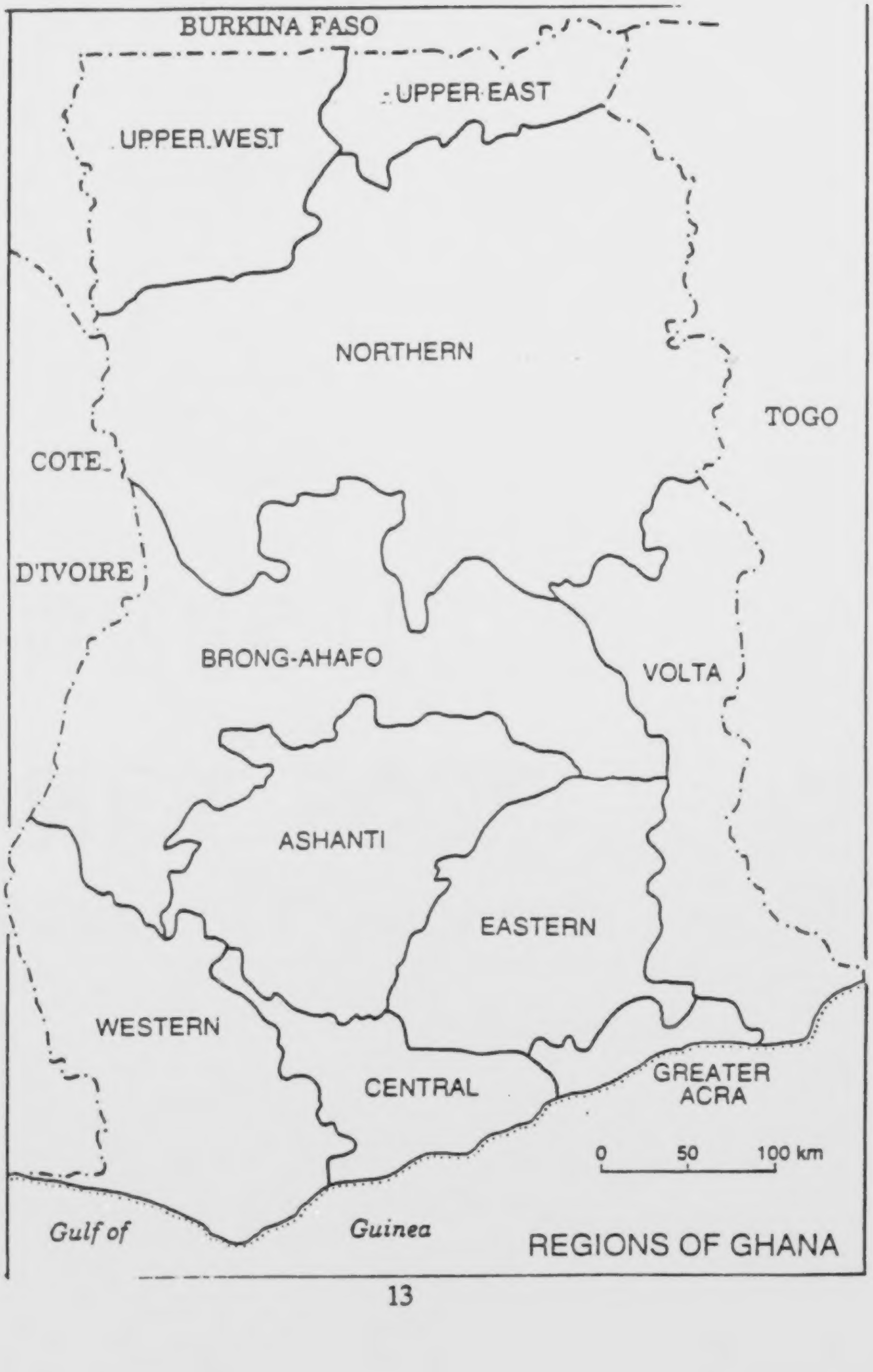
Ghana is surrounded by the Gulf of Guinea on the South, Togo (837km) on the East, Cote d'Ivoire (Ivory Coast)(850km) on the West and Burkina Faso (373km) on the North. It is located in the middle of Guinea Coast between latitudes 4.5 degrees north and 11.5 degrees north. It is therefore quite close to the equator (Ghana Statistical Service, 1992).

Ghana is a unitary state of ten administrative regions: Greater Accra, Ashanti, Eastern, Central, Western, Brong-Ahafo, Northern, Upper East, Volta and Upper West; and 110 districts the latter constituting the basic unit of administration. The total land area of Ghana is about 238,533 square kilometres. The distance from the coast to the northern border and across the widest part from east to west is approximately 672 and 536 kilometres respectively. As the seat of the central government, Accra is the most populous city in Ghana (see Fig. 1).

Broadly speaking the country can be divided into two climatic regions - the south and the north- with some variations in each region. Due to its proximity to the equator, Ghana experiences fairly high temperature throughout the year. Temperature is generally uniform throughout the country. Average temperature ranges between 26 and 29 degrees C with the highest temperature experienced in the northern regions between February and April. There are two rainy seasons in the southern part of the country (April-June and September-November). The annual rainfall here varies between 127 cm and 210 cm. The coastal and the northern parts of the country experience lighter rains with annual rainfall averaging 71 cm and 110-127 cm respectively. As a result, in the coastal and the northern parts of the country the vegetation is savanna (treeless grassland for the coast and small trees for the north).

These climatic conditions are fundamental to certain aspects of Ghanaian economy and social life. Growing of food and export crops such as rice, yam, plantain, cocoa, coffee, cotton etc. and the extraction of minerals and timber from the forest is highly dependent on the climatic zone. The southern part of the country which is mainly forest did attract colonial masters and continues to attract attention and hence "developed" as opposed to the north.

Figure 1


BURKINA FASO
UPPER EAST
UPPER WEST
NORTHERN
TOGO
COTE
D'IVOIRE
BRONG-AHAFO
VOLTA
ASHANTI
EASTERN
WESTERN
CENTRAL
GREATER
ACRA
0
50
100 km
Gulf of
Guinea
REGIONS OF GHANA

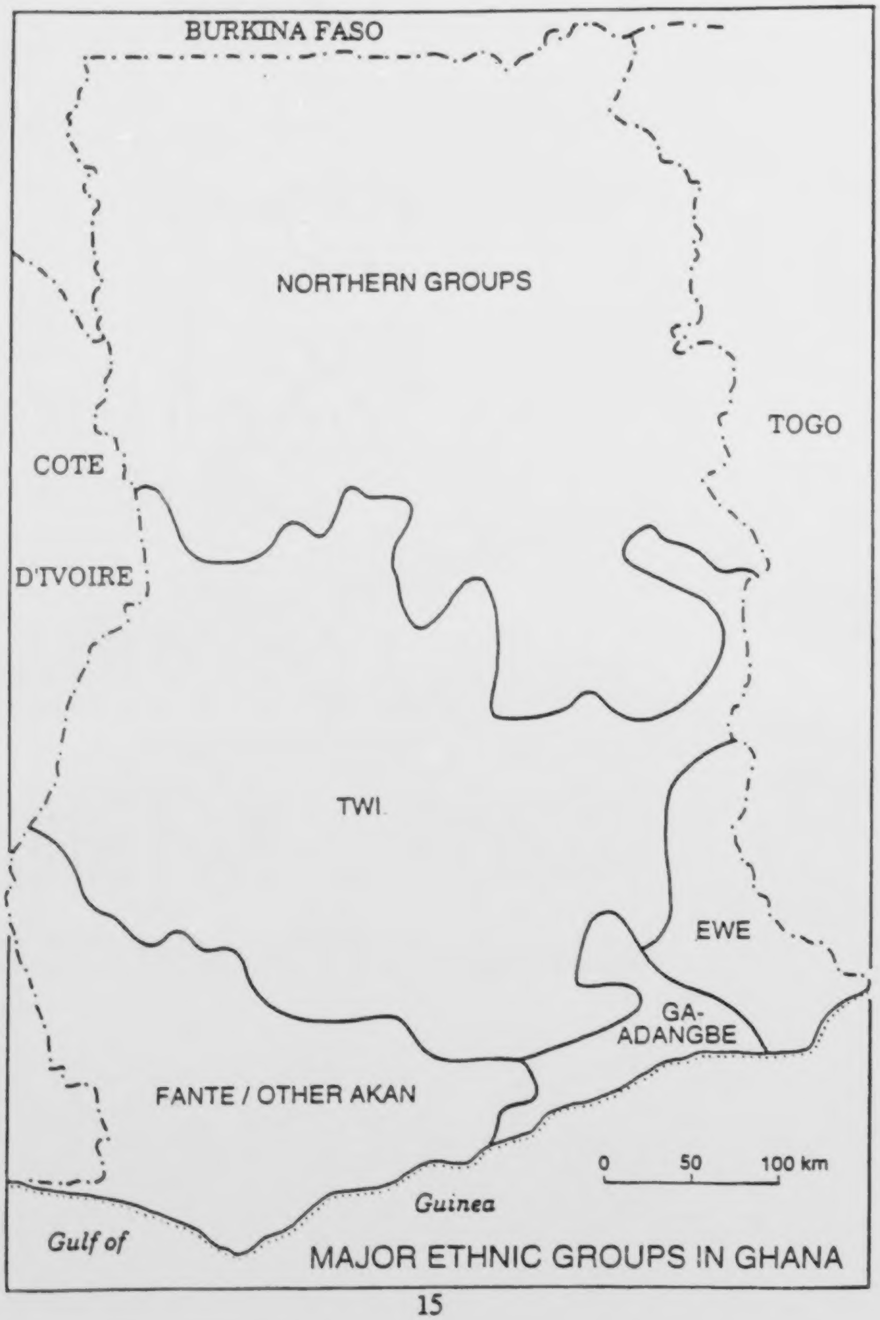
B. Cultural Background of Groups

As a microcosm of African society, Ghana is an amalgam of previously independent and autonomous ethnic groups that were welded together into a political entity in an attempt by the British to create a nation state. The social and cultural milieu in Ghana reflects the primacy of ethnic groups as the basic ordering unit in the society (Smock and Smock, 1975). According to anthropological literature, the geographic setting called Ghana was made up of disparate ethnic groups speaking about 34 distinct and mutually unintelligible dialects (Gil et al, 1964), divided into more than two hundred traditional states (Smock and Smock, 1975: 73). David Kimble, the author of the highly cited work on Ghana's history has this to say about the people of Ghana in the nineteenth century:

> They lived in a large number of isolated, self contained societies, isolated by difficulties of transport, by fear of warfare and slave raiding, by relatively self sufficient economy, and by a tightly knit sense of community and kinship (Kimble, 1963:125)

The present Ghanaian society is pluralistic (see Fig. 2). The population is composed of numerous ethno-linguistic groups each with its own identity and cultural distinctiveness (Baynham, 1988; Pellow and Chazan, 1986). Dialectic fragmentation that characterises the country renders ethnic demarcation very complex and often difficult to divide one group from another.

Figure 2


BURKINA FASO
NORTHERN GROUPS
COTE
D'IVOIRE
TOGO
TWI
EWE
GA-
ADANGBE
FANTE / OTHER AKAN
0
50
100 km
Guinea
Gulf of

MAJOR ETHNIC GROUPS IN GHANA

This problem is more acute in the Northern and Upper regions and the northern portion of the Volta region of the nation country. Overlaying this division, in the Northern and Upper regions, the groups share many similarities in social structure and culture and a sense of common heritage and regional identity which tend to bind people together, especially when they migrate to the south (Baynham, 1988:10; Smock and Smock, 1975:194).

Three bases for ethnic differentiation are dialect distinctiveness, residential segregation and sense of belonging. Basically the population can be classified into four major ethnic groups on the basis of the above criteria, namely: Akan, Northern groups, Ewe and Ga-Adangbe. The main features of these groups are presented below. There is a significant association between ethnic divisions and the regional administrative structure of the country, with the Northern groups predominant in Northern, Upper West and Upper East, Ga-Adangbe in Greater Accra, Ewe in the Volta and the Akan predominantly in Ashanti, Western, Brong-Ahafo, Eastern and Central regions (Fig. 2)

1. The Akans. Twi speaking and Fante\Other Akans (FOA)

For the purpose of this research the Akans are divided into interior and coastal Akans, labelled in this study as Twi and Fante\Other Akans respectively. The Twi speaking Akans are made up of sub groups like Asante, Akwapim, Akyem, Kwahu, Asen, Ahafo, Denkyira, Wasa, Akwamu and Boron. The Fante\Other Akan comprise subgroups like Fante, Agona, Gomua, Nezema, Ahanta, Evalua, Anyi Bawli, Sehwi, Aowin, Chokosi, Together Akans account for 44 percent of Ghana's 15 million people (GDHS Final Report, 1988).

Akans are said to have come from the northern part of Ghana into the central and southern regions of the country as a result of wars in the 18th century. Although Akans are culturally homogenous, there are certain minor linguistic differences which tend to distinguish them from one another. They all have a matrilineal kinship system (tracing descent from the maternal lineage) which sets them apart from the other ethnic groups in Ghana.

While the main occupation of the Fante\Other Akan is fishing and civil service, that of the Twi Akan is mainly trading and farming. The Twi dominated regions (Ashanti, Eastern and Brong Ahafo) are considered the richest territory because of cocoa cultivation, mineral prospecting and timber production. The early contact of the Fante\Other Akan regions with colonial masters has given them an advantage over other regions in terms of educational accessibility. These groups command sizable proportion of the country's secondary and tertiary educational institutions (Ghana Statistical Service, 1992). They have also been highly influenced by christian missionaries.

Traditionally the premium placed on females among the Akan is paramount because they serve as insurance against lineage discontinuity (Sarpong, 1977). Central to the Akan value system is the idea of cooperation between and interdependence of matrilineal kinfolks. The care, the support and the upkeep of children are seen as the responsibility not only of biological parents but also of other relatives. Reciprocity is the law of the Akan social life, with the less fortunate obtaining assistance from the luckier ones.

Ancestral worship based on descent is a cardinal institution of the Akan society (Bleek, 1987; Sarpong, 1977). Birth is viewed as a mechanism of regeneration of the lineage and perpetuation of survivors. It is a way to venerate the ancestors who are considered as the spiritual guides of the lineage (Tufuor and Donkor, 1989; Sarpong, 1977; Fortes, 1950). Marriage is an important transitional social event. One's acceptance as an adult is determined by marriage, and the essence of marriage for men and women is procreation. An adult man or woman who fails to marry or cannot beget children is not only ridiculed but also treated as a social nonentity in social and public matters. Marriage and conjugal families are subordinate to the lineage (Bleek, 1987). Marriage, in no way undermines the couples' ties to their respective kinship lineages. Marriage among Akans functions not as a recruitment mechanism for the lineage but as a means of alliance with other lineages.

2. The Northern groups

Almost the entire population of Northern Ghana- the area north of the Volta river, but excluding the Volta region, now known as the Northern, Upper East and Upper West regions belongs to one of the subdivision of the Northern groups. They comprise the following tribal groups: Nanumba, Tallensi, Kusasi, Waba (Wala), Dagaba (Dagarte), Frafra, Mosi, Mamprusi, Dagomba, Guresi and Builsa, Guruma and many more (GDHS, 1988). Although there are some interesting cultural differences, it is appropriate for the purpose of this research to treat the Northern part of Ghana, which accounts for some 30 percent of the population as one distinct cultural linguistic region.

Perpetuation of lineage is a cardinal value in this society. For example Fortes (1949), in studying the Tallensi, found that the line of descent was of transcendental importance to this tribe. Like the Akans, the principle of economic reciprocity is a function of the system of economic cooperation by means of which the household satisfies its material wants (Gaisie, 1972). This group provides the motivation for high fertility by promoting early marriage and childbearing. Barrenness is highly scorned (Ohadike, 1977). The social organization of some of the Northern sub-groups (such as Tallensi, Kusasi and others) is based on providing support to those raising children (Cleveland, 1986).

3. The Ewe

The Ewe-speaking people inhabit the region South-East of Volta River into the Republic of Togo. The Ewes as a whole demonstrate a high degree of cultural uniformity which justifies their description as an ethnic group, however they are partially heterogeneous linguistically. Ewes in Ghana account for 13 percent of the population and form the third largest ethnic group in the country. It is believed that Ewes migrated from Oyo in Nigeria (Nukunya,1969). They reckon descent patrilinearly and recognise the unity of patrilineal groups.

The area in and around the coastal town of Anglo houses the Anlo Ewes, a particularly tight-knit group. The majority of Ewe population, however are to be found across the frontiers in the former French Togoland. Living among the Ewes are some groups who speak languages different from Ewe. These include Akapafu, Sontrokofi, Avatime and Logba (Baynham, 1988:10).

Ewes are no exception to placing high value on children. The larger the number of children, the greater the prestige accorded to the couple and the more useful the family in social and economic terms for the descent groups and the wider kinship unit. High fertility for both men and women is greatly cherished (Nukunya, 1969, 1975). This value is particularly evident in the day to day linguistic labels, proverbs, names and folktales. For example, " Amewuga" (human being is wealthier than riches), "Vinyo" (children are good), "Amenyo" (human being is asset), "Amesika" (human being is greater than gold).

4. The Ga-Adangbe

The Ga-Adangbe is the fourth largest ethnic group, comprising nine percent of Ghana's population. They are made up of two major tribal groups as the name suggest (Ga and Adangbe) which in turn are made up of several sub-tribes (such as Ada and Krobo). It is believed that they migrated from Northern Nigeria under pressure from the proselytizing Fulani and Dafoleo. Their territory is bounded by the Ewes and the Akwamus, the Effutu and the Awutu and the Akuapem as their Eastern, Western and Northern neighbours respectively (Manoukian, 1964).

Fishing has taken over from farming and hunting as the traditional source of livelihood. Kinship system is patrilineal and the basis of social organization is patrilineage. However this emphasis on patrilineal descent is modified in that succession to offices held by women and inheritance of women's property go to the female lineage. These practices have been attributed to the influence of matrilineal institutions of the neighbouring Akan people especially on the Krobos (Huber, 1993; Manoukian, 1964). Like most African societies, children among Ga-Adangbe have both social and religious values. Far more important is the element that the child is an economic asset and security for parents. As Gaisie (1972:89) has pointed out:

> ...boys begin to carry tools or tackle to and from the farm or the beach

> as soon as they can walk and when they are ten they can be trusted to spread the sail and the fishing lines out to dry and prepare them neatly for the next day's work, fold up the sail and beautifully wind up the dried lines.

Males of working age work hard to support their old parents and relatives. In this context marriage is instrumental in reinforcing the socio-economic strength of families. In view of patrilineal system and fishing as the means of living, males are favoured over females.

C. Social and Economic Background of Groups

Each cultural group has a unique culture as well as social and economic characteristics dictated by geographic location, natural resources and tradition. Although the country as a whole has undergone social, economic and political changes through colonialism, education, etc., the impact of such forces on social behaviour has been different across the various ethnic populations. The effect of such changes on family formation and size among the cultural groups has been shaped by the economic, geographic, and cultural sense of history.

Social change has ushered into some groups new values by providing them with new sets of conceptual tools in explaining reality. These new conceptual tools have initiated social and economic development which have transformed the social organization of some groups resulting in erosion of traditional customs and emergence of secular values and beliefs. Therefore the forces engineered by social change, have worked to influence fertility differentially, depending on a group's socioeconomic and internal characteristics, as well as historical experience.

For example, let us look at the Twi Akan population. Their socio-economic level and sense of great past has resulted in strong adherence to group norms and values. The aftermath of the above social change among this group (Twi speaking Akans especially Ashanti) is described by McLeod (1981:18) as follows:

> In the last eighty or ninety years great changes have occurred in Ghana many brought about by the effort and initiative of Ashanti. Cocoa and other cash crops, commercial mining, the timber trade, the growth of schools and universities, new roads and motor transport have all altered Ashanti life. Yet despite such changes the Ashanti proudly retain many of their customs, display the subtlety, wit and sophistication which pervades their culture and act always with a consciousness of their great past.

Substantial social and economic differences exist between the five principal ethnic groups (Smock and Smock, 1975:207; Pellow and Chazan, 1986:3; Baynham, 1988:11). Available figures indicate that the Ga-Adangbe and the Fante\ Other Akan dominated regions (Greater Accra, Central and Western) outdistance the level of development of the rest of the country with the Northern Groups areas far behind (Ghana in Figures, 1992, Ewusi, 1976).

The educational and economic benefits of British colonialism offered the coastal groups especially the Ga-Adangbe and Fante\Other Akan the advantage of earlier opportunities for education, urbanization and cocoa production. For example the Ga-Adangbe dominated region (Greater Accra) accounts for about 10 percent of the population but has almost 45 percent of all doctors and nurses in the country (Ghana Statistical Services 1992). In his measurement of "levels of regional development", Ewusi (1976:89) has confirmed the above assertion. The Fante\Other Akan command sizable proportion of the country's best educational and health institutions, with the Northern Groups far behind in all amenities. Whereas the population per bed ratio is 477 among Ga-Adangbe and 612 among the Ewe, such ratio is about 1200 among the Northern Groups (Ghana Statistical Services, 1992).

Socio-economic disparities (Appendix 2.1), have created antipathies between ethnic groups fostering attitudes of superiority and inferiority. In many cases, such attitudes have led to ethnic stereotyping and labelling. According to popular images, the Twi Akan population is portrayed as "uncivilised, uneducated, unintelligent, bush people"; while they (the Twi Akan people) refer to the other groups as "cowards, inferior, and stupid." Northern groups are seen as "illiterates and stupid"; the Ewes as "skilful traders and thieves who often dabble in witchcraft" (Aborkwa, 1993).

These differences have not changed since independence and have created a sense of relative deprivation on the part of people of the less developed regions (the Ewes and the Northern groups). As ethnic origin correlates highly with all indices of social and economic development, poverty and backwardness have become identified with territory and ethnic origin rather than with social class. Baynham (1988:12) captures the dynamics between ethnic background and social and economic status as follows:

> In Ghana, as elsewhere in Africa, economic disparities are related to the distribution of natural resources, the policies of the European authorities in the colonial period and the activities of successive governments in the post-independent era. On the whole, these factors have tended to combine and favour those groups that were already ascendant economically. The preferential allocation of government revenue, colonial as well as post-colonial to certain areas resulted in a sense of grievance- even of exclusion from political system- in most disadvantaged regions.

The country's pre- and post- independent developmental pattern has resulted in "regional dependency". The Ga-Adangbe and the Akan dominated regions have emerged as more developed causing "deprived" ethnic groups to migrate to these areas. This has reduced especially the Northern and the Ewe populations into migrant labour status, who serve as a source of labour for the more developed regions. The migrants have been saddled with problems in language, culture, religion and politics and this has reduced them to subordinate status.

As second class citizens much of their culture especially language is more often lost to the dominant group exemplifying the cultural assimilation ideology. For example, among the Twi Akan dominated communities, other groups (especially the Northern and the Ewes) experience overt prejudice. These manifest themselves in social distance, residential and occupational segregation leading to negative socio-psychological results (low esteem, negative self-concept and powerlessness, etc).

In the midst of all these developments, efforts towards preservation of ethnic existence, lifestyle, values and belief system and "ethnic identity" have been cardinal goals among all groups. Ethnic awareness has become a household phrase. This is geared towards combating domination and oppression of the dominant ethnic group culturally or otherwise. Despite high mobility propensities among groups, the importance of familial loyalties and local, regional connections and ethnic identities strongly persist and cut across "objective" strata based on occupation, education and income (Nukunya, 1992; Baynham, 1988). As

Baynham (1988:9) has clearly pointed out:

> The evidence suggest that the pervasive character and persistence of primordial attachment- those that arise from sense of natural affinity deriving from one's birth into a particular family, community or cultural group, rather than from personal affections of common interest- has militated against the emergence of clearly defined status groups in Ghanaian society.

Thus the continuing salience of kinship ties and its network of obligation has inhibited the institutionalization of other allegiances or class.

In Ghana, higher education serves as source of normative reference. The highly educated few influence the conduct of others. It is a group perceived to be superior in numerous ways. It is looked up to and imitated because it is credited with important gifts and desirable attributes. Education of necessity has given power to a few in the Ghanaian society, bringing in its wake deference from the uneducated. The educated people by their political and bureaucratic character in a society where the state has monopoly over everything, tend to control distribution of resources and wealth. Thus the few western educated tend to be wealthy to a high degree relative to the mass of the population. In rural areas where higher education continues to be the prerogative of a relatively few, such disparity and difference is at its apogee.

Also the skill and expertise associated with formal education combined with the structural organization of the country tend to set them apart and above the rest. By their very socioeconomic and political image along with their monopoly over the distribution of schools, hospitals and other social amenities, the bureaucrats (the educated people in the system) have been associated with limitless power, endless wealth and high prestige. The educated people by their upbringing and bureaucratic outlook tend to live in urban areas where socio-economic change or "modernization" has been substantial.

Chapter III
THEORETICAL ORIENTATION

A. The Contribution of Research in Western Societies

The relationship between ethnicity and fertility has been extensively studied with data in North America, Europe, Australia and New Zealand (Chui and Trovato, 1990; Halli, 1987; Beaujot et al, 1982; Trovato, 1981; Trovato and Burch, 1980; Johnson, 1979; Jiobu and Marshall, 1977; Beaujot, 1975; Ritchey, 1975; Kennedy, 1973; Bradshaw and Bean, 1972; Sly, 1970; Goldscheider and Uhlenberg, 1969; Day, 1968; Van Heek, 1956). These studies have approached the issue from two complementary perspectives: the characteristics assimilation and the minority status hypotheses.

The characteristics assimilation thesis argues that fertility differences among ethnic groups (majority and minority) merely reflect the differences in their socioeconomic characteristics. It is believed the differential is a manifestation of the differences in the group's social, economic and demographic characteristics. The sociological basis for this perspective is found in Gordon's (1964) theory of assimilation. While ethnic groups remain structurally separated from one other, primary group relationship internal to the ethnic community develops along social class lines. Here social class is perceived as more important than ethnic status per se, as the source of social, economic and demographic patterns.

According to the characteristics assimilation thesis, differential fertility among ethnic groups are the resultant of the differences in such factors as educational attainment, age at marriage, level of urbanization, female labour force participation etc. The implicit assumption is that irrespective of ethnic background, people who possess the same socioeconomic characteristics have identical fertility levels (Petersen, 1975; Goldscheider, 1971). As socioeconomic characteristics of groups converge, so will their fertility.

It therefore suggests that the fertility of a group with low socioeconomic status will be higher than that of a standard population with higher socioeconomic status (Stokes et al, 1977; Goldscheider, 1971; Ryder and Westoff, 1971). In other words, the fertility of ethnic groups and a standard population would converge when their social, demographic and economic characteristics become similar through social change or are made similar through statistical controls. Thus, fertility differentials between ethnic groups present at a given point in time are temporary due to a social and cultural lag, often indicative of relative economic backwardness or deprivation. Studies by Johnson (1979), Stahura and Stahura (1975, 1979) and Sly (1970), have found support for this contention.

The minority status hypothesis is propounded by Goldscheider and Uhlenberg (1969) and supported by Trovato (1981), Trovato and Burch (1980) for Canada, Jiobu and Marshall (1977), Ritchey (1975), Robert and Lee (1974) and Kennedy

(1973) for the United States. While admitting the premises of the characteristics thesis, this perspective attributes equal importance to the independent effect of ethnicity on fertility differentials.

Ethnic differences in fertility are posited to be a function of the groups' relative position in the social stratification system, whether the collective is a majority or minority group in the sociological sense. Dissimilarity in fertility between ethnic groups is attributed to a feeling of insecurity and perceived discrimination of minority group members (Trovato and Burch, 1980; Marcum and Bean, 1976; Bean and Wood, 1974; Goldscheider and Uhlenberg 1969).

In this connection Goldscheider and Uhlenberg (1969) have argued that the social-psychological insecurities of minority group membership operate to depress its fertility below that of the majority when:

> a) Acculturation of the minority group has occurred in conjunction with the desire for it;
> b) Equalization of social and economic characteristics occurs, particularly in middle and upper social class levels, and /or there is a desire for social and economic mobility;
> c) There is no pronatalist ideology associated with the minority group and no norm discouraging the use of efficient contraception (Goldscheider and Uhlenberg, 1969:372).

The assumption is that a minority group which does not cherish norms and values encouraging large family size, and which does not discourage the use of efficient methods of contraception should experience fertility below that of the majority due to a sense of insecurity and discrimination. However, if a group is committed to religious or socio-cultural norms favouring large families or prohibits contraceptive use, then the group's status will likely enhance its fertility above that of the majority group.

At the centre of the minority status and fertility dynamics as propounded by Goldscheider and Uhlenberg (1969) is the notion of degree and desire for acculturation. As Goldscheider and Uhlenberg (1969:370) have pointed out, "the degree of and desire for acculturation do not necessarily imply structural integration or total assimilation." The interacting effect of cultural and behavioral convergence with the majority along with structural separation is supposed to produce a sense of insecurity among minority groups. If the desire for acculturation and mobility is present, then sacrifices will be made in attempts to move up, and this, it is argued, will depress fertility of the minority group below that of the majority. On the contrary, in a situation where the desire for acculturation is lacking or is frowned upon in favour of preservation of the culture, then the minority group may experience higher fertility than that of the majority.

According to Goldscheider and Uhlenberg (1969), the relationship between minority status and fertility varies at various socioeconomic levels. How equalization of social and economic characteristics of groups will affect fertility depends on the value orientation of the members and sense of real or perceived opportunity for social mobility. This is based on the realization that ethnicity is a multidimensional phenomenon that cannot be reduced to just categories (Lopez and Sabagh, 1978).

Ethnic identity entails more than just membership. At the micro level, ethnic identity (adherence to group norms and values) may be undermined by individuals with socioeconomic mobility. Even though ethnic identification may connote socioeconomic status, the degree of identification is not static. Studies have shown that, as individuals achieve socioeconomic mobility (education, occupation, income etc.), the level of ethnic identity tends to decrease. The dynamics of status and fertility may vary within a given group. Individuals' value orientation, perception and motivation of upward mobility are critical for one to make the necessary sacrifices, including family size limitation. In this connection, whether a group's status in the stratification system will depress or boost fertility is a function of group members' personal desire. For example the socio-psychological insecurities and desire for mobility are likely to be greater among educated than non educated individuals.

The other side of the thesis argues that when a group is concerned with its preservation (Kennedy, 1973; Day, 1968) because of political or historical reasons and /or experience, then the group will adhere strictly to traditional patterns of family life conducive to high fertility in spite of the availability of birth control information and means. Thus a group characterised by normative system and ideological prohibitions against efficient contraceptive use (emanating from culture, history, political experience etc.) will experience rather higher fertility as compared to the majority. The above version of the minority status thesis has been termed particularized ideology or sub-cultural (Trovato, 1981; Beaujot, 1975; Kennedy, 1973; Day, 1968; Van Heek, 1956). In this study we shall term this as cultural effect.

The claim here is that fertility is influenced by value orientations and norms regarding family size and birth control. Ethnic differences in fertility are attributed to values and norms that are specific to a particular group. This perspective explains the fertility of a group whether it is above or below majority. Pronatalist ideology inherent in a particular group may work directly and indirectly in cultural practices such as extended family, inheritance, age at marriage, marital duration. In addition, pronatalist values may emerge as a response to outside pressure and/or historical experience of the group with the standard or another group. This may arise on the basis of inter-group conflict (Kennedy, 1973; Day, 1968). The second source of pronatalist value may be a response to sociohistorical, political or ecological experience of the group. The cultural effect that emerges as a consequence of ethnic interaction and experience is in reality minority group status effect on fertility.

The basic thesis of the minority status explanation therefore is that, where the above three conditions are present or met, the insecurities coupled with the desire for mobility will, depress fertility of a group below that of the standard population group. However, alienation and the insecurity of a group may engender group integration and strong identification with the prevailing norm. When the normative system discourages birth control and encourages large families, then minority group status increases fertility above that of the majority.

B. Household Economic Models of Fertility

Theoretically the characteristics and the minority status hypotheses as discussed above are grounded on the assumption that the basic reproductive decision-making unit is a bonded monogamous nuclear household with pooled economic resources and a common budget (Becker, 1981,1960). It is far beyond the scope of this thesis to review thoroughly all available work on household models of fertility analysis.

There have been many studies concerned with the relation of household resources and fertility. Only the basic ones are discussed to throw light on the characteristic and minority status explanations of differential fertility among groups. A variety of household model explanations of reproduction have emerged in demographic literature (Turchi, 1975; Namboodiri, 1975; Becker, 1960, 1965; Easterlin, 1966, 1969; Freedman, 1963). Although these explanations differ in some respect, they tend to share a common set of assumptions, namely: the investment of human capital, the allocation of human time, household reproduction function, and household as a unit of consumer choice.

The basic assumption is couples are well informed and contemplate on their decisions to reap the greatest satisfaction. Reproduction decision-making is seen as a form of household behaviour which, along with the production and consumption of other goods and services, is governed by the economics of consumer price (Becker, 1960).

Children are equated to household commodities and that desire for children is assumed to be subject to the economic laws of demand and supply. The effect of any variable on reproductive intentions depends on how it changes family income and affects the price of children within the household. Thus an increase in the price of children reduces a household's reproductive goals. For example, in his pioneering application of the household theory to reproductive decision-making, Becker (1960) argued that the households are rational in their reproductive decision-making, and that the, demand for children and reproduction would increase as the price of children decreases or as household income increases, the taste for children or the prices of other household goods increase. In this classical version of the theory, the principal determinant of demand or preference are income, taste and prices.

Becker's (1960) original theory was later modified to fit the "New Home Economics"[1] conceptualization of consumer behaviour (Becker, 1976,1965; Willis,

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[1] For a comprehensive statement of the New Home Economic model see Becker (1981).

1973; DeTray, 1973). Here the value of human time to be used in the production and consumption of household goods including childbearing (in terms of income production potential) was introduced as an additional crucial element in the theory. As the value of human time (potential income) increases, the motivation to allocate time to reproduction is supposed to decline. Here only the wife's time was considered as relevant (Becker, 1976; Willis, 1973). The revised model assumed an inverse relationship between the value of wife's time and children. Various studies to verify this model have yielded inconsistent and sometimes inconclusive results (Simon, 1974; Michael, 1973; Gardner, 1973).

To overcome some of the shortcomings of the "New Home Economics", Easterlin (1975, 1973, 1969), Easterlin et al (1980) introduced sociological considerations into the socioeconomic framework of reproduction. The significant contribution of Easterlin's theory was the introduction of determinants of taste for children and fertility regulation into the socioeconomic framework. For example, Easterlin (1969) argued that a couple's taste for children is largely determined by the consumption behaviour of their parents and parental generation. Parental education, income, social status and religion were cited as shaping their consumption behaviour, and therefore determinants of their adult children's taste for children.

In the context of this model the higher the parent's income, the higher would be their adult children's aspiration for material goods. These higher aspirations for material goods are supposed to reduce the adult children's relative taste for children and thereby reduce their demand for children (Crosbie, 1986:13). The argument is when a couple has reached certain level of family size and perceives that it is possible to have another child, then the couple resorts to fertility regulating practices. Two determinants of fertility regulation have been suggested by Easterlin: these are market and psychic costs for fertility regulation. As these costs approach zero, (the perfect contraceptive society), the more likely a couple is to adopt fertility regulating practices for limiting its family size to the number of children desired.

Relative economic status, which centres on influences of couple and parental incomes on the demand for children has also received considerable empirical attention. The reasoning is that as couples' income increases, the demand for all goods, including children also rises. On the other hand as parental income increases, the aspiration or taste for material goods will rise; these aspirations will reduce the couple's relative taste for children and therefore, reduce their demand for children. Test of this model has produced conflicting and confusing results (Thornton, 1979; MacDonald and Rindfuss, 1978; Crimmins-Gardner and Ewer, 1978; Chaudhury, 1977; Oppenheimer, 1976).

To integrate the household model of reproduction into a broader framework, Turchi (1975) introduced economic and non-economic determinants of reproduction into the microeconomic model. He treats the economic variables as direct determinants of demand and the non-economic variables as indirect determinants of demand. Turchi called for potential rather than present income in the analysis of fertility, and also suggested estimation of potential income for different social groups. Turchi's theory failed to gain support in his own study. He blamed multicollinearity, interaction effects and measurement errors for failing to find support for his model. Namboodiri (1975), has attempted an even more sophisticated model, by emphasizing that fertility decisions are two person decisions wherein the relative dominance of spouse should be considered. He also suggests that each parity should be considered separately in a series of sequential decisions.

While the integrated household model of fertility has been applied with some success in explaining the demand for children in Western societies, its extension to developing countries has proved to be problematic (Fapohunda and Todaro, 1988; Fapohunda, 1988; Crosbie, 1986; Gomes, 1984; Folbre, 1980; Schultz, 1977; Birdsall, 1977). The household model of reproduction has been criticized more extensively than any model. For example it has been accused of its excessive reliance on economic variables and for its failure to consider effects of more subjective values and attitudes on reproductive decisions (Crosbie, 1986; Handwerker, 1986; Ryder, 1975; Perlman, 1975; Leibenstein, 1974; Blake, 1968).

The household model of reproductive behaviour assumes individualism, social, economic and political development and value orientation of Western societies. There has been a shift from dependence on family to formal institutions and structures such as industries, public sectors and welfare system. These institutions tend to give people the sense of security and confidence thereby undermining the power and influence of social relationships (family and kin members) in day to day decision-making including reproduction (Handwerker, 1986).

C. Household Economic Models of Fertility and African Societies

The minority and the characteristics assimilation theses as discussed above are more relevant to countries where immigration has been extensive (eg. Australia, Canada, United States). In these countries the concept of ethnic group is used interchangeably with migrant groups. This is not appropriate in most Sub-Saharan African countries like Ghana where ethnicity is more primordial and the sociological concept of minority is non-existent.

In societies where individualism is at its lowest ebb, and the poor can hardly count on governmental institutions for welfare support, the reliance and influence of extended families and kin relationships for survival and on decision making including reproduction respectively, continues to reign supreme. Therefore, on the demand side of fertility behaviour, family organization and related institutions affect the locus of reproductive decision-making, the formation of reproductive goals, and actual fertility behaviour (Fapohunda and Todaro, 1988:590).

The household model of fertility with the built-in notion of nuclear family or conjugal household with its pooled resources and shared responsibilities, doesn't reflect the reality of African households (Caldwell et al, 1989; Fapohunda, 1988; Caldwell and Caldwell, 1987; Sudarkasa, 1981). For instance, Caldwell et al (1989:202) quote Omari on Ghana "throughout her married life a wife never identifies herself with her husband in his aspirations and interests." Couples continue to see themselves as belonging to different families with few points of common interest. Paulme (1963:13) reports that in tropical Africa "the men put up with the presence of their wives but continue to regard them as strangers..." This is also the case even among the elites (Guyer, 1988; Bleek, 1987; Abu, 1983; Okali, 1983; Robertson, 1976).

A review of ethnographic literature suggests that African households tend to be internally divided and couples participate more in networks of economic and social relations with kins than partners. This challenges one of the tenets of the household model of fertility. The extended family, descent and lineage continue to be of great importance in social organization and reproduction in most African societies (Locoh, 1988; Bleek, 1987). Among the Akans of Ghana, Bleek (1987:139) has reported that "the lineage is the greatest, permanent and fundamental institution which permeates every aspect of life." For continuity, the lineage has vested interests in marriage and childbearing (Page, 1989; Locoh, 1988; Frank and McNicoll, 1987;

Caldwell, 1987).

The influence of lineage on reproductive decision-making transcends all social groups. Caldwell and Caldwell (1987:414) have suggested that the influence of lineage in childbearing decision is such that "even educated women working in the modern sector regard their reproduction- as distinct from their sexuality- as being the decision-making province of their husbands and their families." Among the Akan of Ghana, ties between couples tend to be weak and subordinate to the interests of their respective lineages (Bleek, 1987; Oppong and Abu, 1987).

Also in most African societies and Ghana in particular, studies have shown that couples tend to have separate residences throughout marriage, living with members of their own lineage if both wife and husband have relatives near at hand (Abu, 1983; Hagan, 1983; Robertson, 1976). With reference to the Akan of Ghana, Asante-Darko and Vander Geest (1983:246) have reported that "relatives look askance at marriage in which husband and wife develop a close relationship."

One of the most striking features of African families is institution of child fostering. Fostering, the practice of delegating to other relatives the partial or full responsibility for a child's rearing introduces ambiguity into the standard notion of the biological family as a focus of analysis (Lloyd and Blandon, 1991; Blanc and Lloyd, 1990; Brydon, 1985, 1979; Isiugo-Abanihe, 1985; Goody, 1982; Fiawoo, 1978; Schildkrout, 1973; Oppong, 1973; Good and Goody, 1967).

The institution of child fostering challenges the cost element of demand for children as suggested in the household model of fertility in African societies. In most African societies, parents (fathers and mothers) have very different implicit contracts with their children and do not carry exclusive responsibility for their support (Fapohunda and Todaro, 1988). Therefore the institution of child fostering provides a very fluid and flexible system for rearrangement after birth. Family size tends to be rearranged after birth through continual negotiation between fathers and mothers and other members of the kin group (Lloyd and Brandon, 1994).

Therefore the household model of fertility in terms of costs and benefits of children, or in terms of the demand for children, in which the childbearer is assumed to be the person, responsible for bringing the child to full adult status is quite inappropriate for most of Sub-Saharan Africa (Page, 1989:401). For instance, among the various ethnic groups in Ghana Blanc and Lloyd (1990) have reported that the proportion of households with a fostered-out child ranges from 20 to 48 percent. Likewise, Lloyd and Brandon (1991) have also documented that in Ghana the percentage of households with fostered-in children ranges from 17 percent for households headed by a male of working age, to as high as 74 percent if the head is a woman of age 60 or older.

Also, research has failed to substantiate that high rates of women's labour force participation as a sufficient condition for fertility decline in West Africa.

Working mother's opportunity cost is not a loss of home production time but, instead, a loss of personal leisure (Birdsall, 1977). Furthermore, Gomes (1984) has demonstrated in Kenya that the hypothesized average number of years of schooling per child is positively related to family size.

While not denying the role of price and income effects on reproductive choices, the household model of reproduction may be of limited use as the sole model in explaining Sub-Saharan African determinants of fertility. The rationale behind reproduction in such societies may be the interplay between or a mixture of social, political and economic conditions than purely economic as suggested by the household model. However the relative importance of mixture of factors as against the purely economic framework, should vary across subgroups depending on the groups' position in the social stratum.

D. Sociocultural Models of Fertility Appropriate for African Situation

In transitional societies like Ghana where the concept of minority and majority is less applicable, two theoretical approaches used in weatern researchto explain differences in ethnic fertility differences can be discerned. According to the first which is labelled "characteristics hypothesis", group differences in fertility arise from differences in social and economic factors (Petersen, 1975; Goldscheider, 1971; Goldscheider and Uhlenberg, 1969).

The major thrust of this explanation centres on group variation in social, economic and demographic compositional variable levels (Johnson, 1979; Beaujot, 1975; Goldscheider, 1971; Sly, 1970; Goldscheider and Uhlenberg, 1969). The fertility level of a group is dependent upon the extent to which its members have access to the economic, social and political structure of the larger society. This hypothesis is grounded on the assumption that as people become socially, economically and politically active participants in a society's institutions, social behaviour, including reproduction, should be less dependent on group norms and values.

The main premise of the explanation is that irrespective of ethnic background, groups possessing the same social, economic and political characteristics should have identical fertility (Petersen, 1975; Goldscheider, 1971). Therefore, under this thesis, high ethnic fertility results solely from low levels of educational attainment, age at marriage, female labour force participation and other such social demographic factors.

This hypothesis is based largely on the theory of social mobility and fertility which is a specific derivation of the microeconomic model of action (Merton, 1968). Humans are seen as rational beings who seek to maximize their utilities while minimizing their costs (both material and psychological). The decision to have a child is assumed to occur within a cost-benefit framework; and decisions are taken based solely on individual motivations, with no consideration of group norms (Petersen, 1975; Becker, 1960).

Clearly the characteristics hypothesis rejects the role of cultural factors in explaining ethnic fertility differences. High subgroup (ethnic) fertility levels are seen as temporary. As members of various groups experience social, economic and political development, the opportunity costs of having children tend to rise, and this brings a high fertility ethnic group in line with some standard group in the society (Petersen, 1975; Goldscheider, 1971). Therefore ethnic fertility differences would disappear as ethnic groups follow the path of social, economic and political participation or experience social justice.

There are indications that the demographic significance of the traditional institutions (lineage, child fostering, and others) is changing as a result of economic development, christian missions and secularization (Robinson, 1992; Caldwell et al, 1991; Lesthaeghe et al, 1989). Due to the differential levels of secularization among the various ethnic groups in the country the significance of traditional institutions in shaping ethnic fertility will vary. Therefore to the extent that reproductive decision-making in an ethnic population is kept outside the household model of individuals normative considerations concerning reproduction emanating from a mixture of social, economic, political factors is considered to reign supreme in that ethnic population (Beaujot, 1975).

Subgroup culture is implicit in the second explanation of differences in subgroup fertility. This approach assigns equal importance to the role of distinct value orientation and experiences of various subgroups as an independent factor in explaining fertility levels (Goody, 1990; Lesthaeghe, 1989; Fapohunda and Todaro, 1988; Caldwell and Caldwell, 1987; Polgar, 1972; Goldscheider and Uhlenberg, 1969; Day, 1968; Van Heek, 1958; Davis and Blake, 1956). The cultural effect thesis contains two causal agents independent of sociodemographic factors by which cultural factors may affect fertility: (a) structural effects such as a group's historical experience and social psychological insecurities associated with marginality and; (b) cultural or particularized ideology effects.

Therefore a cultural effect may reflect a mixture of normative, structural as well as socio-psychological dimensions of a group's position in the social stratification system. In the context of this thesis, ethnic fertility levels are seen as an outcome of group membership per se independent of social demographic characteristics (Gurak, 1978; Kennedy, 1973; Goldscheider and Uhlenberg, 1969; Day, 1968).

This explanation therefore, assigns predominant importance to group norms and socio-psychological experiences on the assumption that members of specific groups share ideals, beliefs and experiences that differ from those held by other members of the society of which they are a part (Marcum and Bean, 1976). Therefore differential ethnic fertility levels may reflect differences in groups reaction to environmental (social, economic or political) alienation. Hence variations in ethnic family size may be a result of adaptation to situations of social, political and economic deprivation.

Two underlying mechanisms work to shape an ethnic culture. The cultural orientation that is inherent in the group may be based on norms and values concerning family size. For instance in Ghana, Bleek (1987), Ohadike (1977), Nukunya (1975), Gaisie (1972), Lorimer (1954) and Fortes (1949) have recorded that instruments of social organization, sanctions and rewards tend to place premium on extended type of family and lineage continuity, thereby creating normative system in support of high fertility. The other source is the group's response to social, economic, political and historical experience and status in the stratification system (Ritchey, 1975; Kennedy, 1973). This component is what has been termed minority status effect in this area of research. The cultural norms that a group develops as a result of ethnic interaction is what is considered the structural component of the cultural effect.

Attempts to separate the two sources of the cultural component of fertility have run into measurement problems. Significant multiplicative effect of compositional variables with ethnicity is assumed to reflect socio-psychological dimension of the cultural component (structural component) (Lopez and Sabagh, 1978; Jiobu and Marshall, 1977; Sly, 1970; Goldscheider and Uhlenberg, 1969). In

African societies, where ethnic groups have specific norms about reproduction, the interactive term will be measuring the interaction between the effect of ethnic status in the society and the influence of group's norms. Belonging to a group not only signifies group's level of deprivation but also represents the influence of the norms peculiar to that group. Hence it is impossible to distinguish the two effects by solely referring to the multiplicative term of compositional variables and ethnicity.

The cultural effect explanation assumes that groups are homogeneous and that group behaviour is uniform. The homogeneous composition of ethnic groups along with exposure to uniform sets of values and experiences is supposed to lead to internalization of collective values and norms which are supposed to influence fertility as part of a social process supported and influenced by attitudes, beliefs, rewards and punishments (Turchi, 1975; Parsons, 1969; Gibbs, 1965). Different dimensions of the cultural effect may positively or negatively influence group fertility levels (Caldwell and Caldwell, 1987; Anderson, 1986; Goldscheider and Uhlenberg, 1969; Day, 1968) independent of other social and demographic factors.

Economic conditions undoubtedly exert a powerful influence on conditions of individuals and related events affecting reproduction. However, social theorists argue that within any society, an unequal distribution of social and economic wealth produces differences in quality of life and value orientation of various social groups. Unequal access to social and economic resources and political participation in society, influence contraceptive use, nutrition, view of the world, status of women and psychological dimensions which have direct and indirect influence on fertility. Therefore the household economic model, however popular, may be more relevant to some groups and not to all, particularly in transitional societies.

The effect of modernization on group's social behaviour including reproduction depends on their internal characteristics. At any point in time the prevailing medical, technological, economic and social environment of an ethnic group determines the reproductive tendencies. It is very unlikely that fertility of a group will decline until parents are reasonably confident that a minimum number of children will survive in the environment in which they find themselves. The supposition is, due to differential effect of social, economic and political development among the various cultural groups, ethnic fertility levels reflect a logical response to conditions that groups have to cope with.

Thus ethnic fertility levels in Ghana are shaped by an interplay of social, economic, political, environmental, technological and cultural factors. The dynamics of these forces and institutions are intertwined by government development policies, foreign aid, and change of government. The transitional nature of this society coupled with differential impact of social and economic development among the various cultural populations suggest that ethnic reproductive behaviour cannot be explained by a single model. A proper understanding of ethnic fertility should conceptualize reproduction as situational as well as an adaptive social process. This demands an integration of useful aspects of the models outlined above into a multi-dimensional model particularly suitable for Ghana.

E. Suggested Framework for Explaining Ethnic Differential Fertility

It is a fact that the fertility of an ethnic group depends on those factors which directly affect reproduction (i.e. those which are directly connected with sexual intercourse, conception and gestation and parturition) plus those that exert indirect influence. Those factors having a direct effect upon reproduction (or "intermediate variables") have been listed and described by Davis and Blake (1956). They include, for example, such factors as age of entry into sexual union, coital frequency, voluntary and involuntary infecundity. However the direct and the indirect effects of social, economic, technological and cultural environment cannot be neglected.

The demographic literature is replete with examples of the links between high levels of social and economic development and sustained fertility decline (World Bank, 1986). However whether social and economic transformation can effect a decline in reproductive behaviour in any society depends on the proportion of the population benefitting from the process. Without some elements of social justice or improvements in standard of living for the entire population, little change in reproductive behaviour in any society can be expected (Addai, 1993; Ratcliffe, 1983;

Petersen, 1975).

In Ghana, the antecedents of colonial and post colonial developmental policies and programmes have resulted in structured inequality and differential exposure to modernization. We expect this to manifest itself in different degrees of situational adaptation and attachment to group norms and practices. Prediction of patterns of change among various cultural groups is not straightforward. In general one would expect minimum change among the interior and the northern groups of the country compared with their coastal counterparts. However, such changes are not linear in any sense from one part of the country to other, since within each area, several other factors such as the receptivity of a particular culture, resources endowment, developmental policy, migration, politics etc. affect the degree of change.

Greater Accra (home of the Ga-Adangbe) has benefitted more from the country's social and economic development policies than any ethnic group or region. For example the index of development for the central region, home of the Fante/Other Akans, the second in development, was less than half of that of Greater Accra. The least developed region is the home of the Northern groups, with an index less than 10 percent of the index for Greater Accra. Also using the Physical Quality of Life Index (PQLI), UNICEF (1988) has indicated that the incidence of absolute poverty is highest among the Northern groups, the Ewe and the interior groups and lowest among the coastal Ga-Adangbe. Thus there are stark differences in the levels of poverty between the ethnic groups as a result of resource endowment, politics and associated imbalances between regions (Table A.2.1).

The socioeconomic conditions and political policies at the macro level in Ghana perpetuate differences in economic activity, standards of living, transportation and communication infrastructure among the various ethnic groups. These factors contribute directly and indirectly to ethnic variation in reproductive behaviour. For instance, differences in infrastructure among ethnic communities have a strong influence on contraceptive prevalence, the degree of urbanization, roads, and the quantity and quality of schools and health services.

The ethnic differences in standards of living (health and social services) may have been sustaining differential level of infant and child mortality among the various groups (Ghana Ministry Health, 1990; Akoto and Tabutin, 1989). Where parents are uncertain that one or more of their children may not survive to adulthood, the rational response will be to have a large number of children to ensure that some will reach adulthood. The link between differential impact of social and economic development and fertility is described by American National Research Council (1993:15) as follows:

> The political, social and economic organization of a [country] has direct bearing on the group norms regarding fertility. The demand for a large number of children is likely to be sustained in [communities] where children are needed as a source of labour, where infant mortality is high, and where women's sole means of gaining status and economic security is by having a

large number of children.

Because of the differential impact of social and economic programmes on the cultural communities under study, the selected variables and their relative importance in sustaining fertility may vary from one ethnic group to another. This calls for a group specific model of fertility. Therefore the timing of fertility decline will be different for each ethnic group depending on internal characteristics.

Fertility levels of the various groups are seen as emanating from adaptation to situations of deprivation, insecurity and powerlessness. Therefore the major thesis is that, the greater the impact of environmental or situational factors such as economic, social and political deprivation, insecurity and powerlessness the greater the tendency to adopt norms and behaviour patterns involving large family size. Such adaptation reinforces the survival role of the family and therefore renders the use of contraception and the need to achieve small families less desirable.

This suggests that in any society (especially transitional societies), the effects of social, cultural, technological and economic environment will vary among individuals and groups overtime. In using this framework of analysis it is important to stress the fact that a variety of social, political, economic and cultural factors (both macro and micro) have to be taken into account, and that for individual families we need to envisage a continuing and changing process of adaptation (Askham, 1975).

Ethnic fertility level in Ghana is situated in the context of the social justice theory of demographic transition (Ratcliffe, 1983). Ethnic fertility levels are seen as related to the social, political, economic, technological and cultural environment within which the individual and couples live and act. Distribution of resources within a society is projected as the primary determinant of differential fertility level between social groups (Ratcliffe, 1983; Krishnan, 1976). As the social justice theory clearly articulates:

> .. where the nation state assumes many of the basic security, welfare and protection functions traditionally fulfilled by children, a large family is neither necessary nor utilitarian. However, those who are denied access to the specialized life support systems of the modern sector are of necessity, forced to rely upon the family as a survival or mediating institution, and to structure it accordingly... a large family is eminently rational, and neither its utility nor its size will diminish until conditions conducive to small families are attained through social reorganization (Ratcliffe, 1983:13).

The framework of determinants of ethnic fertility guiding this study involves macro and micro level factors. Macro factors are intertwined with other factors (micro, psychological and history) in shaping reproductive behaviour of various cultural groups. Given that each group has a unique culture, history, economic, social environment, technological and political experience, it is appropriate to develop group specific models.

Reproductive behaviour among various ethnic groups is assumed to be conditioned by a mixture of forces: demographic (eg. mortality, nuptiality, migration, age structure), cultural (eg. religion, norms, values, belief, customs, status of women), economic (eg. job opportunity, debt), technological (eg. modern contraception, mass media), social (education, health, residence), and political (eg. colonialism, neo-colonialism, changes in government forces), foreign aid (eg. bilateral, multi-lateral), and development policies and programmes. These macro forces condition the ethno state environment. Changes in one process affect the other and the chain of causation may differ from one ethnic group to another depending on the group's socioeconomic characteristics.

The suggested model combines both the macro and the micro levels of factors. The macro refers to the contextual dimensions and the micro the individual characteristics. Based on available data, this study will not be able to test the whole model empirically, especially the contextual level variables. From the model, may we may envisage that effects of some of the macro factors (exogenous factors) on fertility may flow through intermediate endogenous macro variables. For example a group's history, demographics, economics, social, cultural, technological and environmental conditions influence fertility indrectly. These sets of factors may indirectly affect fertility through development policies and programmes, region and place of residence, ethno state conditions and socioeconomic, demographic and cultural and psychological characteristics of the individuals.

In Ghana, disparity among ethnic groups directly and indirectly induce high fertility and migration among some. Because of the existing social organization, benefits accruing from development go to the educated few who control the socio-political power structure of the society. Also some cultural groups tend to benefit more than others. These result in poor social and economic conditions and reinforce reliance on family for survival and hence low contraceptive usage resulting in failure of the family planning programme.

Foreign assistance has an equally important indirect effect through the same endogenous variables. Strings and conditions attached to foreign aid do not take the social structure of the society into account. This tends to create crises and poverty among the poor which undermine the population regulation programmes. Changes in government and politics, through colonial and neo-colonial rulers and military coups and counter-coups cause political and economic instability. This has direct and indirect effects on the reproductive process. Political instability, especially military takeovers, creates suspicion and mistrust among ethnic groups. In a country where people look up to the political system for everything, unconstitutional struggle for power among the various ethnic groups tends to undermine the people's sense of confidence and security which are crucial for fertility decline.

So far a framework for analysis of ethnic fertility - as opposed to the analysis of ethnic behaviour - has remained implicit. With this conceptual framework, this study explores the determinants of fertility among the ethnic groups in Ghana. Analysis of the determinants will be carried out within the context of the model stressing the importance of macro factors (history, social, economic, politics, culture, technology, and others). Five ethnic groups namely: Twi, Fante\Other Akan (FOA), Ga-Adangbe, Ewe, and Northern groups form the focus of the research.

Chapter IV
DATA AND METHODOLOGY

The data for the present study come from the Ghana Demographic and Health Survey (GDHS) conducted in 1988 as part of the worldwide Demographic and Health Surveys Programme, aimed at assessing the current state of reproductive behaviour and health indicators in some 40 countries in Africa, Asia and Latin America. The objectives of the GDHS were among other things to provide essential information on fertility level, knowledge and use of contraception, reproductive intentions of women aged 15-49 and health indicators. It was also meant to provide data for the evaluation of the performance of the national family planning programme and for future programme operation. The GDHS was a collaborative effort between the Ghana Statistical Services and the United States Institute for Resource Development Macro Systems, Inc. (IRD).

A. Sample Design

The sample selected for the 1981 Ghana Living Standard Survey (GLSS) was used for the GDHS. It was a nationally representative, stratified, self-weighting probability sample of women aged 15-49. Ghana Enumeration Areas (EA) were first stratified into three ecological zones, namely coastal savanna, forest, and northern savanna. These were further stratified into urban, semi-urban and rural EAs. The

EAs were then selected with probability proportional to the number of households.

A total of 4966 households were selected for interview. Nine percent of the households were found to be vacant or absent. Screening visits to these households identified 4572 eligible respondents. The response rate among the eligible respondents identified in the sample households was 98 percent, yielding an effective sample of 4488 women aged 15-49.

B. Data Collection

Three different types of questionnaires were used for the GDHS. These were the household, the individual and the husband questionnaires. The household and individual questionnaires used in the GDHS were adopted from the demographic and health survey (DHS) questionnaire "model B" for the DHS program. The data were collected through a face to face interview. The individual questionnaire contains eight sections : respondent's background information; reproductive behaviour; knowledge and use of contraception; health and breastfeeding; marriage; fertility preferences; husband's background and women's work; weight and height of children aged 3-36 months.

GDHS data were collected between February and June 1988. After preliminary drafts, a final draft of the questionnaire was translated into seven local languages, namely Twi, Fante, Nzema, Ga, Ewe, Hausa and Dagbani. All the GDHS interviewers were able to conduct interviews in English and in at least one local language. The questionnaire was pretested from mid October to early November 1987. Five teams were used for the pretest fieldwork. These included 19 persons who were trained for 11 days.

For the main survey, eight days of training was organized for the 16 supervisors and editors who had earlier taken part in the pretest. This was followed by a 3-week training for interviewers. Personnel involved in the fieldwork were 40 interviewers (26 males, 14 females), eight supervisors (six males, two females), eight editors (seven males, one female) and 11 drivers. Fifty six of the field staff were recruited from the Ghana Statistical Services, whilst 11 persons were recruited from the Department of Community Development and Department of Social Welfare. Fieldwork began on 13th February 1988 and was completed on June 5th 1988.

C. Quality of Data

Although the level of non-response in the GDHS was low, the survey was plagued to a considerable extent by errors. These include intentional and unintentional errors associated with age misreporting at the household level. Like most surveys from developing countries, GDHS survey is characterised by age heaping. Misreporting of age at significant events such as marriage, first birth, first intercourse etc. is very common (Blanc and Rutenberg, 1990; Ghana, 1989). For example, the age distribution of the successfully interviewed women in the sample in single years of age reveals disproportionately large number of women reporting ages with terminal digits of zero and five and somewhat less popular digits two and eight. Comparatively, ages ending in one, seven and nine are avoided (Arnold, 1990; Rustein and Bicego, 1990; GDHS Final Report, 1988).

Strict quality checks were followed in all phases of the survey to obtain reliable and high quality data. Measures such as self-checking of completed interviews before being edited by the field checkers and supervisors, random field checks were incorporated into the quality control of the fieldwork. Completed questionnaires were collected on a weekly basis from the regions by the field coordinators. Coding, data entry and machine editing went on concurrently at the Ghana Statistical Services in Accra as the fieldwork progressed.

There were no systematic re-interviews to assess the quality of the GDHS data, however, some comparisons were made with data from other surveys (GLSS) and 1984 census. The comparison of the age distribution of the GDHS respondents with 1984 census suggest the GDHS data to be reliable and of reasonably high quality at least with respect to some key demographic variables. This is not to deny the need for much more careful assessment of the data especially if they are to be used to estimate parameters. Our analysis is focused on differentials, and it is reasonable to assume that, if there is under-reporting, it is for most part uniform among the different subgroups that interest us.

D. Population Analysized

Like elsewhere in Africa, Ghanaian women marry early and remarry quickly after divorce or widowhood. What individuals report in surveys as marriage may range from legal marriage, consensual undertakings, various religious and customary procedures (Van de Walle, 1993; Meeker, 1992; Awusabo-Asare, 1988; Robertson, 1984). The wide array of union types makes it difficult to clearly define a reproductive unit for analysis in the context of ethnicity. This calls for a broader definition of the unit of analysis to capture as many reproductive actors as possible.

Therefore the unit of analysis is ever married females aged 15 to 49. These women are within the biological span of childbearing. The unit of analysis includes currently married, separated, divorced and widowed. The reasoning behind such a unit of analysis is that although divorce is common in Ghana especially among the majority matrilineal Akans, so is remarriage, particularly of the women still in their reproductive years. So the total time lost to exposure to the risk of childbearing may be small (Smith et al, 1984). Several institutions, including polygyny and levirate (a practice whereby a widow automatically remarries a close relative of the deceased, often a brother) in almost all Ghanaian ethnic groups facilitates quick remarriage following widowhood.

E. Dependent Variable

The dependent variable is the cumulative fertility of the respondents measured by the number of children ever born to females. This is the most frequently used dependent variable in fertility analysis. Children ever born is affected by age at marriage and duration of marriage. Thus in the analysis one has to control for age at marriage and and duration of marriage. To avoid the confounding effect of marriage as pointed out, some scholars have argued for a new measure of cumulative fertility such as marriage duration ratio (DRAT) which incorporates both age at marriage and duration of marriage to allow a more direct estimate of the effect of socioeconomic factors on fertility than children ever born (Boulier and Rosenwig, 1978). Because of the lack of data for measuring the age specific natural fertility rate, which DRAT requires, children ever born is used in this study.

F. Explanatory Variables

On the basis of theoretical importance and data availability, the socioeconomic and demographic determinants of ethnic differential fertility are: respondent's and husband's education[2], current residence (coded: 1 = urban and 0

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[2] The respondent's and husband's education variables are based on completed level of education. In order to derive an interval scale of education, the mid-points were calculated as follows:

= rural), childhood place of residence (coded: 1 = urban and 0 = rural), respondent's work status (coded: 1 = working and 0 = not working), husband's occupational status (coded: 1 = managerial and 0 = non managerial), net marital duration (in single years), respondent's age (in single years), and age at first birth (in single years).

1. Respondent's and husband's education

Studies have consistently observed that education has a negative effect on fertility (Clelland and Rodriguez, 1988; Caldwell, 1982; Oppong, 1981; Cochrane, 1979; Graff, 1979). However, there has been differing interpretation as to how education affects fertility, especially in the African context (Caldwell, 1982; Cochrane, 1979). One explanation revolves around the axiom that more educated women are more likely to delay marriage and to work for paid employment in the formal labour market after leaving school, consequently, the demand for children may be inversely related to level of educational attainment (Cohen, 1993).

On the on other hand, the inverse relationship between education and fertility

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	GDHS coding	Mid-points assigned
No schooling	0 years	0.0
Primary education	1-10 years	5.5
Secondary education	11-15 years	13.0
Higher education	16-21 years	18.0

is situated in the context of the modernizing effect of education on individual values and aspirations (Miller and Inkeles, 1974). Education is projected as a vehicle for adoption of western ideas regarding the family. It is supposed to encourage a more child-centred view of one's parental responsibilities (Caldwell, 1982). Generally education is supposed to improve the couple's ability to practice efficient contraception and also may empower women with more decision-making authority in the household (Kasarda et al, 1986; Bulatao, 1984).

Some studies have reported a curvilinear relationship between fertility and education. In Africa high fertility among women with no education, even higher among those with some primary education and lowest among those with secondary and higher levels of education has been observed in various studies (Gyepi-Garbrah, 1985; Cochrane, 1979; Graff, 1979). In any event the present study would like to examine whether attainment of formal education in Ghana is related to smaller family size.

2. Respondent's current place of residence

Studies have consistently reported that women living in urban areas have fewer children than their rural counterparts (Shah and Singh, 1985; Goldscheider, 1971). The explanation for this difference is that the price of raising "quality" children is greater in a larger urban environment than in rural areas (Easterlin, 1983). In most developing countries where socioeconomic development is urban biased, urban residents tend to have access to higher education. Therefore, unlike the rural residents, urban women tend to be more educated and more likely to participate in the formal labour market. In Ghana, in contrast to the rural residents, urban residents tend to benefit from improved health services which reduce infant and child mortality as well as access to family planning programs. These factors work directly and indirectly to effect differential fertility among rural and urban residents in Ghana (Goody, 1990).

3. Childhood place of residence

Childhood background differences in childbearing patterns have mainly been interpreted in terms of internalization of social norms and values which influence reproductive behaviour later in life. It is assumed that women who grow up in rural or traditional social setting tend to internalize pronatalist values (Goody, 1990; Lesthaeghe, 1989; Bleek, 1987).

4. Respondent's work status

The link between fertility decline and economic change in industrial economies, resulting from a decline in the agricultural labour force and a shift to industrial labour is well documented (Coale, 1986; Birdsall, 1977). The reasoning is that women's participation in the labour force, and their acquisition of high-paying jobs are economic incentives for them to desire smaller families. As women participate in the labour force, they are likely to enhance their status outside the home (Lesthaeghe, 1989; Caldwell, 1982). Labour force participation increases women's market value and therefore increases the opportunity costs in the market place as well as the psychic costs in rearing children (Turchi, 1975; Freeman, 1963).

However empirical findings have not always supported these hypotheses. Studies in less developed countries (Harman, 1970; Stycos and Weller, 1967) indicate no significant relationship between female employment and fertility. Some studies suggest that rural working women have higher fertility than the non-working women (Peek, 1975; Goldstein, 1972). In Ghana, women are largely employed in the agricultural and the informal sector of the economy (Manu, 1993). These jobs usually keep the women close to home and allow flexibility in their working conditions to enable them to deal with child-care. It is expected then that in Ghana, the effect of a woman's work status on her reproductive behaviour would be more important for the educated professional, civil servants and clerks who spend much of their time away from home than for women in agriculture and manual jobs.

5. Husband's occupational status

Husband's occupational status tries to measure the effect of income on couples' reproductive decision. High income is supposed to positively influence fertility as couples can afford more support for their children (Becker, 1981, 1960). However, those who earn high income will seek quality children and therefore reduce the demand for more children. It also affects the socioeconomic status of the couples and hence adoption of a culture which may have negative effect on fertility.

In general, the evidence of occupational fertility differentials is fragmentary and inconclusive. Theoretically it affects the socioeconomic status of the family which influences fertility behaviour (Becker, 1960). The reasoning is that those in modernized occupational sector, which commands prestige in society, would have lower fertility than those in more traditional low prestigious jobs. The theoretical basis of such an assertion is that women whose husband's have prestigious jobs will likely engage in other social activities which will have negative effect on fertility. The couple's socioeconomic reference group can also affect their taste and values of material goods and children (Easterlin, 1966; Freedman, 1963).

6. Net marital duration

Marital duration is usually measured by taking the difference between the women's current age and age at first marriage. As such, it refers simply to the time elapsed since first marriage without regard to any marital breakdowns. Net marital duration incorporates the needed refinement by removing from the grossly calculated marital duration all periods of marital breakdowns. Thus, it measures the total effective time spent in married state. The longer the net marital duration, the greater the risk of pregnancies and childbearing, unless intervened by contraception.

7. Respondent's age

One of the most influential variables on fertility is age. Under normal circumstances, the higher a woman's age the larger her cumulative fertility. This is because it measures the amount of exposure to the risk of childbearing. It is often used to control for both cohort and differential exposure effects.

8. Age at first birth

Age at birth measured in single years is an indicator of a woman's overall exposure to birth. Age at first birth has been found to be very useful in understanding the fertility dynamics in some African countries (Westoff, 1992; Bongaarts et al, 1984) and particularly in Ghana (Akuffo, 1987). Lower age at birth is associated with illiteracy, lower participation in family planning, low labour force participation and rural residence, all of which correlate highly with large family size (McDonald, 1985; McCarthy, 1982; Casterline and Trussell, 1980). Ethnic differential on this variable is quite marked and should be related to fertility.

G. Hypotheses

Based on the general demographic literature as reviewed above irrespective of ethnic background and age cohort, the specific hypotheses put forward in this study are:

a) education is negatively related to fertility;

b) urban residence is inversely associated with the number of children ever born to a woman;

c) urban childhood place of residence is negatively related to family size;

d) husband's managerial work is negatively related to fertility;

e) age is positively associated with family size;

f) age at first birth is inversely related to fertility;

g) net marital duration is positively related to family size.

H. Method of Analysis

Besides simple descriptive statistics (e.g., means and percentages) used to describe fertility patterns among various ethnic groups, multivariate techniques will be used to disentangle some of the complex relationships among ethnicity, selected sociodemographic factors and fertility. The techniques to be used are multiple regression and regression standardization and decomposition analyses.

1. Multiple regression

Multiple regression is a general statistical technique which helps to analyze relationship between a dependent variable and a set of independent variables. As a descriptive tool it is used in this study as a prediction equation and to control for other confounding variables. It is also used as an inferential tool which involves estimating population parameters from the sample observation and hypothesis testing (Agresti and Findley, 1989; Neter and Wasserman, 1977; Kerlinger and Pedhazur, 1973).

The standard linear multiple regression has the following additive form:

$$Y = a + B_1X_1 + B_2X_2 + B_3X_3 + \ldots + B_kX_k + U$$

where:

Y = expected fertility

a = constant

B_i = partial regression coefficient for each of the predictors (i=1,2 .....k).

X_i = predictor variable (i=1,2,....k).

U = random error term

k= number of predictors

Based on our conceptual framework and selected variables, the basic regression model guiding this study is as follows:

$$E[CEB] = \text{Constant} \ (+)\ b1{*}NMD\ (-)\ b2{*}AFB\ (+)\ b3{*}RA\ (-)\ b4{*}CPR \\ (-)\ b5{*}RE\ \ (-)\ b6{*}UCR\ (-)\ b7{*}HMW$$

where: E[CEB] = Expected Number of Children Ever Born

NMD = Net Marital Duration

AFB = Age at First Birth

RA = Respondent's Age

CPR = Current Place of Residence

RE = Respondent's Education

UCR = Urban Childhood Place of Residence

HMW = Husband's Managerial Work Status

NB: The predicted directions are shown in brackets.

The coefficients are estimated through the ordinary least squares (OLS) procedure that minimizes the sum of squares of errors or residuals. This process assumes that residuals are normally distributed, have zero mean, equal variance and are uncorrelated. The above model also assumes that relation is linear and that the effects are additive.

We tested for the assumptions of linearity and constant variance for the error terms using simple graphical analysis of residuals (Neter and Wasserman, 1977). The residual (error term) plots of the dependent variable (children ever born) does not reveal any systematic association. This indicates that (a) the residuals do not deviate from zero systematically-- that is, the linearity assumption is satisfied, and (b) the residuals do not vary with X_i,-- that is, the error variances are constant for X_i. We are unable to test for the independence of error terms. But generally with a large number of observations (such as we have in this study), the lack of independence may be ignored. Most importantly, we have no reason to believe that error terms are not independent.

In general, multiple regression can be used if dependent and independent variables are measured in at least interval scale. A few cautions are in order, however. The dependent variable should not be severely skewed. If so, their error terms are likely to be heteroscedastic, contributing to imprecise and inefficient OLS estimators. Fortunately our only interval-scaled dependent variable is not severely skewed thus obviating serious problems.

Another important restriction in any multiple regression analysis is that the explanatory\predictor variables should not be highly correlated with each other. This is the problem of multicollinearity. When predictors are highly correlated, the estimated regression coefficients tend to be ambiguous and cannot be used to measure the relative contribution of the individual predictor to the dependent variable (Kendall, 1976). This problem is minimized in this study by reducing the list of predictors down to those not highly correlated with each other. For example infant mortality and age at first marriage were taken out because of their high correlation with place of residence and age at first birth respectively. However we retained net marital duration and age of respondents which correlates highly because of substantive reasons. These variables have consistently emerged as very important determinants of reproduction in African demographic studies (Caldwell and Caldwel, 1987, 1977; Bongaarts et al, 1984). Therefore despite the high correlation between the two variables they were included to put the necessary controls in place.

I. Development of the Comparison (Elite or Standard Group)

In Ghana (formally Gold Coast), the imposition of British institutions, culture, system of administration and monetization of the economy undermined the power of traditional institutions and groups, and the emergence of a dominant culture. Although the people maintain their primordial attachment as to cultural identity, the western culture is seen as the ideal. As such the notion of subgroup acculturation is less straight forward than in other parts of the world such as in North America (Lieberson and Waters, 1986; Porter, 1965).

Although Ghana's decolonization process witnessed particularistic (ethnic, regional and religious) politics, the Nkrumah's post-colonial government led by the Conventional Peoples' Party (CPP) adopted a policy of pluralism and centrism. The CPP promise of munificent future for those who were systematically held back under the colonial and traditional constraints undermined an appeal for particularistic (ethnic and regional) politics, especially among the non-Akan groups (Pellow and Chazan, 1988:31-32). The government's socialist policies which promised equality and better life for the poor majority worked to the disadvantage of the the ethnic and reginonal parties.

In addition, most ethnic groups especially the Akans (the majority) is divided in terms of location, colonial experience, traditional source of political authority (chiefdoms), and above all inter-group war experiences (eg. the Ashantis wars). The Twi speaking Akans especially the Ashantis, who used to control greater part of the country and brought most groups under their political domain (McLeod, 1981) is resented by some Akan groups for their bitter historical experience with this group. Such experiences have created hidden suspicion and distrust among groups especially against the Ashantis. This has therefore thwarted the efforts of the Akan to capture political power as a collective unit. Also military rule that has characterised the country (four out of eight regimes) has also undermined the domination of political power by one ethnic group. Political power has not been systematically controlled by any particular ethnic group in Ghana.

The educational and economic benefits of British colonialism were not evenly distributed among the ethnic groups in Ghana. The southern groups, especially Fanti/Other Akans, and Ga-Adangbe by their coastal location had the privilege of enjoying the fruits of western education, christian missions and public service long before the other groups. Also the colonial and the post colonial development policy, which were dictated by economic tradeoffs (mineral exploitation, agricultural raw materials and others) have worked to the advantage of the Twi speaking Akans.

The rich agricultural forest and mineral resources of the Twi speaking Akan and other Akan regions forced the colonial and post colonial governments to develop these regions. As a result, there is a sharp socioeconomic disparity between the geographic concentrations of the ethnic groups. Unlike the areas occupied by the Twi and the Fante\Other Akan the volta and northern regions home of the Ewe and the Northern groups are not well endowed with agricultural or mineral resources and such areas are far less developed. Ethnic origin has become closely associated with all other indices of social and economic development (Baynham, 1988:11).

Therefore Ghana's historical political experience (colonialism), development policies and social organization preclude the identification of a sociologically meaningful dominant or standard group. There is no satisfactory answer to which ethnic group constitutes the dominant or standard group (politically and economically) in Ghana (Baynham, 1988; Pellow and Chazan, 1986; Smock and Smock, 1975). Because the standardization technique requires the identification of a sociological reference or standard population, we have decided to construct a hybrid social category which will serve as the standard for our purposes.

In Ghana there is a sharp socioeconomic and political disparity between the educated class and the rest of society. Regardless of ethnic background, educated people in Ghana form a social class on their own with considerable social and economic power and influence (Nukunya, 1992). Therefore our standard group consists of working Ghanaian women whose husbands have at least completed secondary education.

This group influences the conduct of others by being merely what it is. It is judged to be superior in numerous ways. It is imitated by others because it is credited with important and desirable attributes. Members in this social category possess power derived from the control of economic resources, occupancy of government offices, and that obtained through social deference (Nukunya, 1992; Baynham, 1988; De-Graft Johnson, 1966).

The main feature of the educated group is its bureaucratic character. In Ghana, like most post-colonial countries, occupancy of governmental offices is the principal basis for distribution of economic resources and achievement of high social status and wealth. This group controls political and economic power and is seen as an embodiment of socioeconomic success. In this sense, formal education is the most important medium of social mobility and hence socioeconomic assimilation (Abrokwah, 1993; Assimeng, 1981).

Researchers who have applied the characteristics hypothesis and standardization typically employ in their statistical models variables such as education and occupation because they are considered to be determinants of taste for goods and children, as well as of opportunity cost of childbearing (Goldscheider, 1971; Easterlin, 1969; Becker, 1960). The woman's work status is also important; as a posited measure of value placed on market pursuits (Willis, 1973). In general the greater the earning capacity of a wife, the higher the opportunity cost of having a child (Waite and Stolzenberg, 1976; Mincer, 1963). Empirical studies that include such variables have demonstrated a strong negative association between participation in economic activity and fertility (Crimmins-Gardner and Ewer, 1982; Thornton, 1979). Also working women whose husbands are educated are likely to have activities, interest and taste that are incompatible with a large family size (MacDonald and Rindfuss, 1978; Easterlin, 1969).

Given these variables, their theoretical importance and proven relevance in explaining fertility, husband's education and wife's work status were selected for the construction of our standard group. Both serve as proxies for social status and income (which is not available in our data set) which in Ghana and elsewhere are supposed to influence reproductive decisions. Further, husband's education may be considered as a proxy for taste formation concerning family size, lifestyle as well as knowledge of and use of modern contraceptive methods. The practical significance of education and work in Ghanaian society implies that, ceteris paribus, working women whose husbands have at least secondary educated should be more socioeconomically integrated than non-working women whose husbands have low education.

This group tends to be urban in their residential background. Although they form a small proportion of the population, their political, economic and social power and influence is far reaching. Given the size of the Akan population and especially the early contact of the coastal Akans with the colonial education, the Akans account for a sizable proportion of the elite group as suggested in this study. However they have continue to demonstrate interest in the traditional power institution of the country, the chieftancy. Although they reject most traditional practices, they continue to demonstrate attachment to their cultural and ethnic heritage.

The variables which were used in the construction of the reference group (husband's education and repondent's work status) were excluded from the analysis because of multicollnearity and coding problems. For example, the dummy coding of the respondent's work status (working =1 and non working = 0) which tends to cut off the variation on this variable coupled with high correlation with respondent's education in analyzing the reference group, necessitated its exclusion from the analysis. Also the high correlation between husband's education and husband's managerial position necessitated exclusion of husband's education. Also in order not to limit the variation on socioeconomic variables when it comes to analyzing specific the ethnic groups the reference group was included in the analysis and therefore the construction of this group did not affect the results of our findings.

Chapter V
ANALYSIS AND RESEARCH FINDINGS

A. General Characteristics of Groups

5.1. Sociodeographic characteristics of young cohorts

Based on the data file available, a model for the determinants of ethnic differential fertility is attempted using some selected sociodemographic variables. Table 5.1 depicts the mean values of sociodemographic factors and family size for the elite and the ethnic groups for the age cohort 15-34. From the table it is clear that members of the elite group compared with each of the ethnic groups, are more educated, more likely to work in managerial occupation and are more urbanized. This supports the suggested importance of education in Ghanaian society. The elite or standard group on average starts childbearing later than all other groups and also has more stable marriages as measured by net duration of marriage.

The average family size for the young age cohort (15-34) ranges between 2.8 children for the Fante/Other Akan (FOA) while that of the elite group is 2.3 children. Among the cultural groups, the Northern groups score lowest on all social characteristics. This is not surprising given their socioeconomic characteristics. The range for the level of social status variables is marked between the southern and the northern cultural groups.

Table 5.1

Sample Size, Mean and Standard Deviation* of Selected Variables of Ever-Married Women
Aged 15-34 by Ethnic Background, Ghana 1988

DETERMINANTS	ELITE GROUP	TWI	FANTE\OTHER AKAN	GA-ADANGBE	EWE	NORTHERN GROUPS
Children Ever Born	2.308 (1.663)	2.657 (1.893)	2.771 (1.932)	2.601 (1.600)	2.467 (1.733)	2.558 (1.794)
Respondent's Education	7.553 (4.613)	5.230 (3.369)	4.061 (3.829)	5.328 (3.946)	4.322 (3.962)	1.682 (3.091)
Current Place of Residence#	0.580 (0.494)	0.314 (0.465)	0.315 (0.465)	0.415 (0.494)	0.249 (0.433)	0.055 (0.410)
Childhood Place of Residence!	0.169 (0.378)	0.149 (0.357)	0.138 (0.345)	0.153 (0.361)	0.054 (0.227)	0.055 (0.227)
Husband's Occu. Status+	0.380 (0.486)	0.126 (0.332)	0.106 (0.309)	0.106 (0.309)	0.099 (0.298)	0.077 (0.267)
Respondent's Age	27.285 (4.163)	26.050 (4.665)	25.750 (4.404)	26.023 (4.340)	25.699 (4.588)	25.797 (4.579)
Age at First Birth	19.709 (3.415)	18.708 (2.733)	18.386 (2.807)	18.856 (3.370)	19.084 (3.289)	18.889 (2.792)
Net Marrital Duration	8.624 (4.893)	8.421 (5.071)	8.440 (5.063)	8.306 (4.917)	7.711 (4.777)	8.414 (5.024)
Number of cases	295	872	384	183	349	459

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*Standard deviation shown in parentheses.

# Proportion urban for current place of residence (1=urban, 0=rural).

! Proportion urban for childhood place of residence (1=urban, 0=rural).

+ Proportion managerial work for husband's occupational status (1=managerial work, 0=non managerial work).

For example on average, 3.6 and 3.5 years of education separate the southern Twi and the Ga-Adangbe ethnic groups and the Northern groups repectively.

The Ewe and the Northern groups score low behind the Twi and the FOA. The data reveal that, the inverse relationship between sociodemographic variables and fertility does not exist across the ethnic groups. Comparatively the poor ethnic groups, the Ewe and the Northern groups exhibit respectively lower average family size of 2.5 and 2.6. The Ewe and the Northern groups tend to be rural in their childhood and current residential backgrounds.

Therefore the comparatively low fertility of the Ewe and the Northern groups may be conditioned by fertility-inhibiting norms such as longer duration of postpartum abstinence and breastfeeding, prevalence of polygyny and widowhood, less stable marriages as well as high infertility (Gaisie, 1981). Gaisie (1972) has explained the comparatively low fertility of the Northern groups in terms of sex-imbalance and high incidence of separation between spouses arising from seasonal migration to the other regions for jobs.

5.2. Sociodemographic characteristics of older cohorts

Table 5.2 presents the mean values of the social demographic characteristics of the elite and the ethnic groups for the age cohort 35-49. As expected the elite group scores highest on all variables except net marital duration. About 62 per cent of the elite group tend to reside in urban areas and 46 per cent of the husbands of the females occupy managerial positions.

The Twi and the FOA score next to the Ga-Adangbe in all social variables. The predominantly hinterland Northern groups and the Ewe are polar opposites to the elite and the coastal Ga-Adangbe groups in social demographic characteristics, with the forest and coastal Akan groups somewhere in between but closer to the Ga-Adangbe than to the elite group.

Although the Twi score higher on social status characteristics than the Ewe and Fante\Other Akan and Northern groups, the former has comparatively higher fertility than the latter. This may be conditioned by the high proportion of rural residential background among this group, besides the Northern groups. Another plausible explanation may be high incidence of infant and child mortality and poverty among this group (Ghana Ministry of Health, 1990). High infant mortality is linked with comparatively poor health and nutrition of mothers. Severely malnourished and /or anaemic women are not only likely to deliver low birth weight infants who are vulnerable to death and diseases, but are also likely to have lactational deficiencies which increase the risk of mortality.

Table 5.2
Sample Size, Mean and Standard Deviation* of Selected Variables of Ever-Married Women
Aged 35-49 by Ethnic Background, Ghana 1988

DETERMINANTS	ELITE GROUP	TWI	FANTE\OTHER AKAN	GA-ADANGBE	EWE	NORTHERN GROUPS
Children Ever Born	4.957 (2.378)	6.575 (2.645)	6.092 (2.675)	5.972 (2.800)	6.172 (2.643)	6.317 (2.424)
Respondent's Education	6.702 (5.499)	3.340 (4.011)	2.232 (3.540)	3.495 (3.790)	2.631 (3.298)	0.926 (2.626)
Current Place of Residence#	0.617 (0.488)	0.308 (0.462)	0.349 (0.478)	0.482 (0.502)	0.354 (0.479)	0.249 (0.433)
Childhood Place of Residence=	0.149 (0.357)	0.130 (0.337)	0.101 (0.302)	0.168 (0.374)	0.051 (0.220)	0.068 (0.252)
Husband's Occu. Status+	0.464 (0.501)	0.113 (0.316)	0.107 (0.310)	0.206 (0.406)	0.071 (0.258)	0.042 (0.201)
Respondent's Age	40.270 (4.316)	41.120 (4.648)	40.532 (4.401)	40.759 (4.514)	40.985 (4.5030	40.808 (4.418)
Age at First Birth	20.014 (3.780)	18.732 (3.637)	19.247 (4.277)	20.198 (4.343)	19.572 (3.936)	20.027 (4.134)
Net Marital Duration	21.667 (5.764)	23.582 (5.601)	22.395 (6.169)	21.491 (6.466)	22.485 (5.601)	22.604 (5.941)
Number of cases	141	416	218	108	198	265

* Standard of deviation shown in parentheses.
# Proportion urban for place of residence (1=urban, 0=rural).
= Proportion urban for childhood place of residence (urban=1, rural=0).
+ Proportion managerial work for husband's occupational status (1=managerial work, 0=non managerial work).

In a pronatalist matrilineal society like the Twi, to ensure that families are not left childless, people continue to have several children in the hope that some will survive. Also among the rural majority, religious and cultural reasons may induce high average fertility. For example, the cultural premium placed on children and especially daughters, may force women with boys to continue bearing children until a girl is born (Sarpong, 1977).

Tables A.5.1 to A.5.6 (Appendix) present the zero order correlation matrix of the variables used in the models for the elite and the five ethnic groups for the age cohort 15-34. Generally, the relationship between fertility and the selected variables is similar in direction and magnitude, for the elite and the five ethnic groups. The only exception is the positive association between husband's managerial worker status and family size among the Twi and the elite groups. This may be due to the level of social development among this cultural group (McLeod, 1981). Urban childhood residence is positively associated with family size among the Ewe. With the exception of husband's occupational status and childhood place of residence as indicated, the correlation matrix lends some support to the hypotheses of the study.

Tables A.5.7 to A.5.12 (Appendix) exhibit the zero correlation matrix of the selected variables for the elite and the five ethnic groups for the old age cohort 35-49. The selected social demographic variables demonstrate moderate relationship with fertility. Unlike the young age cohort, all the variables show the hypothesized direction with fertility.

B. Hypotheses

Selected sociodemographic variables of the elites are analyzed as a background to the ethnic group specific regression models. For the purpose of this regression analysis, the dependent variable is the cumulative fertility of women. Based on the household model of fertility, the specific hypotheses put forward for the elite group are as follows:

a) education is inversely related to the number of children ever born to a woman;

b) urban current place of residence is negatively related to the number of children ever born to a woman;

c) urban childhood place of residence is inversely related to the number of children ever born to a woman;

d) husband's managerial work is negatively related to the number of children ever born to a woman;

e) respondent's age is positively related to the number of children ever born to a woman;

f) age at first birth is inversely related to the number of children ever born to a woman;

g) net marital duration is positively related to the number of children ever born to a woman.

C. The Standard (Elite or Reference) Group

Table 5.3 presents the regression coefficients (unstandardized and standardized) for the young and the old cohorts of the elite group. Net marital duration and husband's managerial work status have statistically significant effect on fertility for the young age cohort.

Contrary to expectation, husband's managerial work has positive effect on fertility for this group. It has been argued in demographic literature that middle-class couples usually demand quality children and as such develop a lifestyle incompatible with a large family size (Becker, 1960). The positive relationship between fertility and husband's managerial occupational status in the elite group does not support this argument. The model explains 44.1 per cent of the variance in children ever born. The positive link between husband's work status and fertility questions the elitist behaviour in regard to reproduction.

Table 5.3
Stepwise Regressions of Children Ever Born,
Elite Group by Age Cohorts, Ghana 1988

Determinants	Young Cohort 15-34	R^2 Change	Old Cohort 35-49	R^2 Change
Net Marital Duration	.2193*** (.6454)	.4292	.0454 (.0386)	.0000
Age at First Birth	-.0787 (-.0947)	.0000	-.1365*** (-.2169)	.0366
Respondent's Age	.0940 (.0932)	.0000	.1260 (.1348)	.0000
Cur. Place of Residence	-.0615 (-.0821)	.0000	-1.0406** (-.2135)	.0565
Respondent's Education	-.0842 (-.1097)	.0000	-.1161** (-.2685)	.1370
Child. Place of Residence	-.0597 (-.0793)	.0000	.0663 (.0714)	.0000
Husband's Occu. Status	.3841*** (.1123)	.0125	-.0538 (-.0604)	.0000
Constant	.2710		1.1091	
R^2		.442		.230
Adjusted R^2		.437		.213
Number of Cases	295		141	

Standarized coefficients are in parentheses
*** Coefficient significant at .001 level
** Coefficient significant at .01 level
* Coefficient significant at .05 level

Despite comparatively high levels of education and urban residence (Table 5.1) they fail to achieve statistically significant effect on fertility for this group. What this suggests is that education has no important role to play in affecting fertility - a position diametrically opposed to the western concept.

Age at first birth, urban residence and education achieve statistical significance at .01 probability level among the older population. All these variables have a negative effect on fertility and explains 23 per cent of the variance in fertility. Unlike the younger age cohort, husband's managerial work status has a negative non significance effect on fertility for the older population.

D. Findings: Ethnic Groups

1. The Twi

Table 5.4 shows the regression coefficients (unstandardized and standardized) of the predictors in the model for both the young and old the Twi populations. The findings reveal that five of the determinants have statistically significant effect on family size for the young age cohort. Net marital duration and education are statistically significant (at .01 level) and age at first birth, age and current place of residence are statistically significant at the .001 level. The model accounts for 62 per cent of the total variance in fertility among the Twi and a lion's share of this (55.2 percent) is explained by net marital duration.

Table 5.4

Stepwise Regressions of Children Ever Born, Twi by Age Cohort, Ghana 1988

Determinants	Young Cohort 15-34	R^2 Change	Old Cohort 35-49	R^2 Change
Net Marital Duration	.0557** (.1519)	.5528	.1611*** (.3411)	.1603
Age at First Birth	-.2403*** (-.3469)	.0106	-.1137** (-.1564)	.0465
Respondent's Age	.2411*** (.5944)	.0458	.1164 (.0652)	.0000
Cur. Place of Residence	-.3462*** (-.0850)	.0092	-1.1872** (-.2074)	.0195
Respondent's Education	-.0339** (-.0604)	.0033	-.0708 (-.0757)	.0000
Child. Place of Residence	-.0159 (-.0256)	.0000	.0117 (.0132)	.0000
Husband's Occu. Status	-.0193 (-.0121)	.0000	-.0637 (-.0714)	.0000
Constant	.679		5.271	
R^2		.622		.226
Adjusted R^2		.619		.221
Number of Cases	872		416	

Standardized coefficients are in parentheses

*** Coefficients significant at .001 level

** Coefficients significant at .01 level

* Coefficients significant at .05 level

As expected, urban childhood residence and managerial work status have a negative effect on fertility, however they fail to achieve statistical significance. Unlike the younger age group, only three of the selected social demographic variables in the model have statistically significant effect on fertility for the older age cohort. As expected the net marital duration demonstrates a significant positive effect on fertility for this group. Age at first birth and urban residence which are significant at the .01 level, are the other two variables.

The percent of total variance explained by the model for the older Twi population is 22.6 of which 16 per cent is from net marital duration. Although the zero order correlation matrix demonstrates a negative effect of childhood urban residence on fertility among the older age cohort, this predictor has positive effect on family size for the Twi older population in the regression model. Explanation for such a finding is difficult. Education demonstrates a negative effect on fertility, however it fails to achieve statistical significance.

The findings reflect the reality of the Twi social structure. The relative importance of net marital duration and age at first birth stress the importance of marriage in the Twi society. The social organization of the Twi is anchored around lineage, and marriage is the means by which the lineage ensures its perpetuation (Bleek, 1987). Lineage, through the institution of child fostering in matrilineal kinship system, contributes to the economic and social security of women and hence easy entry into marriage and reproduction (Lloyd and Brandon, 1991; Blanc and Lloyd, 1990; Henn, 1984). It has been argued that to the extent that economic insecurity induces high fertility, reproduction should be low among women in matrilineal settings. However, our data do not support this line of argument. The long term benefits that accrue to mothers in this society may be responsible for high fertility.

The positive effect of urban childhood residential background on fertility for the older cohort questions the logic behind childhood background and value orientation. This unsual finding may be attributable to rural-urban migration. The finding suggests that childhood residential background does not play an important role in reproduction decision making as current place of residence among both the younger and the older Twis. The data reveal that urban residence has a statistically significant role in shaping the fertility of the Twis. This finding speaks volumes for the urban bias in the developmental pattern of Ghana. Because of urban bias, women in urban areas tend to have more education, higher income, access to health facilities and hence lower infant and child mortality.

Also urbanism reduces fertility because women are more likely to be employed, marriage tends to be postponed, and fewer people marry, so that the proportion of single and unattached persons is greater in cities. In addition, urbanism is supposed to influence fertility through its impact on personality.

Urbanites are likely to be more competitive, more open to change, more "rational", more time conscious and future oriented, and more confident than their rural counterparts and thus more likely to practice contraception. These are usually viewed as aspects of urban residence which contribute to fertility dynamics.

Another determinant of the Twi fertility for both age cohorts is the age at first birth. The importance of age at first birth as determinant of fertility in the Twi society is linked with educational attainment. This association revolves around the fact that more education delays early entry into reproduction. Also work for paid employment in the formal labour market also affects reproduction- an indirect effect of education. Education extricates a woman from the authority of kin who demand high fertility, imbues her with career aspirations outside the home, teaches her western scientific facts about reproduction and health, and emboldens her to ask for contraception (Oppong and Abu, 1987; Caldwell, 1982; Graff, 1979).

Considering the contextual and structural correlates of the Twi society and the socio-cultural environment in which education is provided, there must be higher education to induce a good decline in fertility. Looking at the mean level of education of the age cohorts, the lack of significant effect of education on fertility for the older age cohort is not surprising. This suggests that the average level of education for this age cohort has not reached the threshold level necessary to undermine the cultural institutions sufficiently to effect a significant decline in reproductive behaviour.

Another important factor which may be sustaining the observed fertility among the Twi population is the status of women in this society. The position of women may have improved, but as generally true for the rest of the world, they certainly have not yet achieved equal status with men. Although this is a matrilineal society, it is important to note that the implications of matrilineality do not extend to patriarchal authority as such. Men still assume control over matters of inheritance, land, marriage and politics (Henn, 1984). In matrilineal society where the survival of matrilineage depends upon its female members, the socioeconomic well-being of women takes second place to marriage and childbearing. Therefore women clearly lag behind in key areas as education and economic opportunity outside the home and the farm.

Although there is a tendency for the proportion of girls in primary school to be higher in the Twi communities, this pattern shifts in favour of boys at higher levels of education (Lloyd and Brandon, 1994; Gugler and Flanagan, 1979). The explanation of this phenomenon is situated in the context of expected cultural roles of women within the family. Females are often wholly dependent upon having children to attain a favourable position in the Twi society (Tufour and Donkor, 1989; Sarpong, 1977). As Blake (1965:1174) has pointed out, "children are instruments for achieving virtually prescribed social statuses...[,] the almost exclusive feminine creativity and achievement..." Families tend to put much interest and resources into the education and vocational training of males to the neglect of the females especially among the illiterate families (Lloyd and Brandon, 1994). Among the rural majority, higher female education is perceived as a threat to the lineage, as it delays reproduction. Therefore girls are encouraged to marry and start having children at a younger age. Prolific childbearing is honoured and parents of large families and mothers of twins and triplets are held in special esteem (Addai and Trovato, 1995; Sarpong, 1977:7; Gaisie, 1972:84; Fortes, 1950:262).

2. The Fante\Other Akan (FOA)

Four of the determinants have significant effect on children ever born among the young Fante\Other Akan (Table 5.5). Age at first birth and respondent's age are statistically significant at .001 level and they have negative and positive effect on fertility respectively. Respondent's education and net marital duration show statistically significant effect on fertility at .01 level. As expected, while the former has a depressing effect the latter demonstrates a positive effect on family size. Childhood urban background and husband's managerial work status have positive non significant effect on fertility. The four significant variables explain 64.7 per cent of the variance in fertility. Current urban residence does not have a statistically significant effect on fertility. Like the Twi old cohort, the urban childhood background has a positive effect on fertility.

For the old age cohort, net marital duration and husband's occupational status achieve statistical significance at probability of .001. The other variable which has a significant effect on fertility is age at first birth. The three variables account for 33.3 per cent of the variance in children ever born. Unlike the younger cohort, husband's managerial work status has a statistically significant negative effect on children ever born for the older cohort. The respondent's education fails to achieve statistical significance among the older age cohort. The differential role of education among the cohorts may be due to differences in average levels education (Tables 5.1 and 5.2). This may reflect the differential modernization that has taken place in this society.

Given the earlier access to education in the country, the non significant effect of education on children ever born found in the older cohort of this ethnic group suggests that several factors influence the strength of the relationship between fertility and education, including levels of socioeconomic development, rural or urban residence, and pronatalist pressures. For the older FOA, cultural pressure towards high fertility is strong enough to obliterate entirely the effect of several years of schooling on reproductive behaviour. The analysis also suggests that for education to induce significant reductions in children ever born among the FOA the communities, the average level of school should be higher (Graff, 1979).

Table 5.5
Stepwise Regressions of Children Ever Born: Fante\Other Akan by Age Cohorts, Ghana 1988

Determinants	Young Cohort 15-34	R^2 Change	Old Cohort 35-49	R^2 Change
Net Marital Duration	.1110** (.2907)	.6065	.1797*** (.4145)	.2766
Age at First Birth	-.1915*** (-.2782)	.0281	-.1115** (-.1783)	.0197
Respondent's Age	.2044*** (.4660)	.0053	.0106 (.0056)	.0000
Cur. Place of Residence	-.0454 (-.0714)	.0000	-.1123 (-.1309)	.0000
Respondent's Education	-.0400** (-.2907)	.0076	-.0778 (-.0889)	.0000
Child. Place of Residence	.0244 (.0401)	.0000	-.0673 (-.0815)	.0000
Husband's Occu. Status	9.656E-04 (.0016)	.0000	-1.5955*** (-.1848)	.0368
Constant	.254		4.384	
R^2		.648		.333
Adjusted R^2		.634		.324
Number of Cases	384		218	

Standardized coefficients are in parentheses
*** Coefficients are significant at .001 level
** Coefficients are significant at .01 level
* Coefficients are significant at .05 level

Looking at the history of emergence of cities in Ghana and particularly among the FOA, the statistically non significant effect of urban residence on fertility among them is not surprising. Like other West Africa communities, cities and towns among them, are indigenous, cultural and commercial based rather than industrial production centres (Peil and Sada, 1984, Gugler and Flanagan, 1979; Williams, 1970). Williams (1970:236) describes the issues as follows:

> The colonial city developed...as a centre of commerce and administration, rather than industrial production. It originated as a means whereby the metropolitan rulers established a base for the administration of the countryside, and the exploitation of its resources, and consequently the transfer of the surplus extracted from the countryside to the metropolis. At the same time, the city itself engaged in parasitical exactions of a surplus from the countryside.

Urbanization among this group is an outgrowth of European impact and can be explained in terms of the development of colonial administrative centres, ports and schools. Therefore the economic opportunities that engineered migration in the early days of the colonial government's development projects were more suitable for males than females and did not challenge the traditional role of women in this pronatalist matrilineal society.

Therefore this unexpected finding is attributable to gender bias in rural-urban migration. In this cultural group, boys and girls are socialized into clearly defined sex roles. Women are imbued with the values of child rearing, domestic, and subsistence work near the home. Boys, on the contrary, acquire training in what society considers the most important and risky tasks such as hunting, mechanized work, clerical jobs, weeding etc. Therefore for the men to assume their cultural responsibility and prove their manhood, they have to move to unknown places, while women stay home caring for the family.

For both age cohorts, the predominant cause of urbanization has been economic. The need for cash and the fast deteriorating rural economy serve to push rural residents to towns and cities (Caldwell, 1969). The impact of urbanization on this group has been one of participation in the urban economy with a loyal attachment to rural community. They operate in a spatially separate but culturally and economically integrated system. They visit home to choose a bride or mate, and there is a constant flow of messages between urban and rural family members. The bond between FOA urbanites and their rural families is clearly expressed by Busia (1960:73) as follows:

> A person's membership of his lineage is localized. Wherever he may go, however long he may be away, he belongs to his lineage town or village. The economic and social obligations of kinship such as those connected with funeral, marriages and divorce, as well as political allegiance and jural rights and status which are also tied up with kinship, keep alive his attachment to his native town and village.

As Fortes has pointed out, kinship obligations persist over distance and time; movement may reduce kinship duties and influence but not end them (cited in Oppong, 1974). It is not uncommon to find a house full of kins in Akan cities.

Under the impact of urbanization, the FOA traditional family has assumed various degrees of conjugal family nucleation and patterns of extended families. Instead of a breakdown, there is continuity of the extended family. The urbanized family functions in a number of ways as an active agent of rather than as an impediment to pronatalist values. For example, Busia noted in one Akan city among the FOA (Sekondi-Takoradi) that the town dwellers' dependents increase in number with a rise in salary (Busia, 1960). Because of the economic crisis in the 1980's this phenomenon has been on ascendancy. Therefore, the extended family can be expected to continue to be an indispensable bridge between the individual's condition and his or her aspiration especially in reproduction decisions.

Further, the role of urbanization on pronatalist values among women of this cultural group may have been undermined by adaptive mechanisms in this society. Urban opportunities according to the western theorists are supposed to create conflict between the roles of women as a mother and as a worker. Lack of significant influence of urban residence on fertility may be that couples in such a predominantly semi-literate society in the process of transition have evolved adequate adaptive mechanisms for adjusting the traditional beliefs to the demands of urban challenges. These include inviting mothers or younger sisters of couples to live with them and take care of children in return for old age care and extended family obligation. With housemaids or relatives to do most of the domestic work in an urban environment, the FOA can easily combine childbearing and urban challenges.

The negative significant effect of husband's managerial work on children ever born among the older age cohort as opposed to positive non significant effect among the younger age population may be indicative of the influence of extended family on the younger population in this society. This may be due to the value placed on children and social norms relating to fertility. Irrespective of husband's work status, younger couples may be pressured by the corporate kin groups to have children to ensure continuity of the lineage. Also this may reflect the fact that young men start in low-level jobs and rise during their lifetime. Since in any one year their wives have more children while they are younger, the effect of this predictor is reduced (Petersen, 1975).

For the Twi and a greater proportion of the FOA groups, farming, especially cocoa production, continues as the basis of their economy. Because of the simple technologies involved in farming, more children become desirable. For the rural majority, the largest share of income originates from farming. Labour is therefore a central source of income for the majority. In such a situation, the system depends on all sources of labour. Women and children assume full duties in the farm. For instance Gaisie (1972:89) has summarised the link between farming and family size as follows:

The nature of the agricultural technique employed is such that a large number

> of children is desirable. During farming and harvesting times, all available labour is mobilized by the head of the household. In Ashanti (Twi), as in other tribal societies, groups of farmers form a team and work each other's field in rotation, but a father who has many children who have attained working age is in a stronger position. Among the Fante in Southern Ghana, when a child is sufficiently large to handle a cutlass, his indoctrination as a farmer begins.

It is apparent therefore that among the Twi and the FOA, where peasants form a sizable proportion of the population, the observed high fertility is a logical response to their economic environment. To sum up, the significant factors affecting fertility among the Akans are net marital duration, age at first birth, education and current place of residence (the Twi) for the young cohort. For the old age cohort determinants of fertility are net marital duration, age at first birth, current place of residence (the Twi) and husband's occupational status (the FOA).

3. The Ga-Adangbe

The regression findings for the Ga-Adangbe by age cohorts are presented in table 5.6. Net marital duration, age at first marriage, and respondent's age are the significant predictors of fertility among the young Ga-Adangbe population. Only demographic predictors achieve statistical significance in the young age cohort. The three significant demographic variables explain 56.4 per cent of the total variance of fertility for this age cohort. Although table 1.1 demonstrates that the young Ga-Adangbe population tends to be comparatively more educated and urbanized, yet the data suggest that the selected socioeconomic factors do not significantly affect fertility. Among this group, Azu (1974) has shown that urban living is not associated with greater social mobility than rural residents. Also studies of unmarried and married junior civil servants in Accra (home of the Ga-Adangbe) have shown that long term urban dwellers did not desire smaller family size than their counterparts of rural background (Oppong, 1974). Unlike the young age cohort, only two variables, net marital duration and urban residence, demonstrate statistically significant effects on fertility among the old cohort. The total variance explained by the significant variables in the model for this age group is 48.5 per cent.

Age at first birth and respondent's age which have significant effect among the young population fail to achieve statistical significance. Respondent's education and husband's managerial work status fail to achieve statistical significance, but while education has a negative effect, husband's managerial work status has a positive effect on fertility. The failure of respondent's education to have statistically significant effect on family size and positive effect of husband's managerial work status may be contrary to expectation, but is not surprising, as the status of women for this group is very low (Huber, 1993).

Table 5.6
Stepwise Regressions of Children Ever Born, Ga-Adangbe by Age Cohort
Ghana 1988

Determinants	Young Cohort 15-34	R^2 Change	Old Cohort 35-49	R^2 Change
Net Marital Duration	.0685* (.2106)	.4784	.2643*** (.6103)	.3821
Age at First Birth	-.2244*** (-.4725)	.0390	-.0627 (-.0664)	.0000
Respondent's Age	.1800*** (.4883)	.0475	-.0535 (-.0498)	.0000
Cur. Place of Residence	-.0829 (-.1238)	.0000	-1.791*** (-.3212)	.1031
Respondent's Education	-.0913 (-.1298)	.0000	-.0439 (-.0543)	.0000
Child. Place of Residence	-.0600 (-.0897)	.0000	-.0014 (-.0019)	.0000
Husband's Occu. Status	-.0711 (-.1016)	.0000	.0332 (.0453)	.0000
Constant	1.577		1.155	
R^2		.565		.485
Adjusted R^2		.557		.475
Number of Cases	183		108	

Standardized coefficients are in parentheses
*** Coefficients significant at .001 level
** Coefficients significant at .01 level
* Coefficients significant at .05 level

In a patrilineal society, irrespective of socioeconomic background, a woman has a greater need for children to help secure her access to property, particularly land held by her husband's lineage. Children constitute the women's only possible claim on the wealth produced in marriage but held by the husband for his heirs. For this people, children are productive assets and parents usually derive immense satisfaction from having them. In summary the significant determinants of fertility for this group are net marital duration, age at first birth and current place of residence.

4. The Ewe

Table 5.7 presents regression coefficients of the predictors in the model for both the young and old Ewe. The data reveal that four of the selected variables have statistically significant effects on fertility for the young age cohort. Net marital duration failed to achieve statistical significance. Age at first birth and respondent's age are statistically significant at the .001 level. Urban residence and husband's managerial work status are also significant at .01 level.

The significant predictors in the model explain nearly 65 per cent of the variance in fertility among the young Ewe population. It is important to note that education and childhood urban background fail to achieve statistical significance, however childhood urban background though not statistically significant shows a positive effect on fertility.

Only three predictors (net marital duration, urban residence and age at first birth) have statistically significant effect on fertility as far as the older cohort is concerned. Respondent's age, education, childhood urban residence and husband's managerial work status do not show significant effects. The significant predictors account for only 16.7 per cent of the variance in family size among the older Ewe population.

Failure of education to achieve a significant effect on fertility for both age cohorts is not surprising, as level of education is low. The apparent irrelevance of formal education to economic prosperity among women especially among university graduates in Ghana, tends to discourage female education, particularly, for women in urban centres. Also in a society where there are no social security benefits for old people, parents look to their children as the insurance against poverty in old age.

Table 5.7
Stepwise Regressions of Children Ever Born, Ewe by Age Cohorts, Ghana 1988

Determinants	Young Cohort 15-34	R^2 Change	Old Cohort 35-49	R^2 Change
Net Marital Duration	.1501 (.0889)	.0000	.1089** (.2308)	.0992
Age at First Birth	-.2852*** (-.5414)	.5835	-.1356** (-.2018)	.0309
Respondent's Age	.2929*** (.7756)	.0506	.0158 (.0809)	.0000
Cur. Place of Residence	-.3569** (-.0892)	.0089	-1.0790** (-.1957)	.0374
Respondent's Education	-.0416 (-.0641)	.0000	-.0871 (.0912)	.0000
Child. Place of Residence	.0632 (.1065)	.0000	-.0635 (-.0683)	.0000
Husband's Occu. Status	-.5869** (-.1011)	.0069	-.1201 (-.1300)	.0000
Constant	.530		6.757	
R^2		.650		.168
Adjusted R^2		.645		.154
Number of Cases	349		198	

Standardized coefficients are in parentheses

*** Coefficients significant at .001 level

** Coefficients significant at .01 level

* Coefficients significant at .05 level

5. The Northern Groups

The regression findings for both age cohorts of the Northern groups are presented in table 5.8. Age at first birth, respondent's age and education have statistically significant effects on fertility for both young and old cohorts. Net marital duration fails to achieve statistical significance, however it demonstrates a negative effect among the old age cohort. While the significant variables in the model explains 74.1 per cent of the total variance in fertility for the young age cohort, such significant variables account for 31.1 per cent for the old population.

The statistically significant effect of education for these age cohorts is very surprising. Tables 1.1 and 1.2 show that the average level of education for these groups is comparatively low. It is interesting to note that for both age cohorts of this cultural group, urban residence has positive effect on fertility. While urban childhood background and husband's managerial work status have positive effects on the fertility of the young cohort, a negative effect of the managerial position of husband and childhood residence are noticed for the old people.

Table 5.8
Stepwise Regressions of Children Ever Born, Northern Groups by Age Cohorts, Ghana 1988

Determinants	Young Cohort 15-34	R^2 Change	Old Cohort 35-49	R^2 Change
Net Marital Duration	.0700 (.0493)	.0000	-.1092 (-.0612)	.0000
Age at First Birth	-.2910*** (-.4529)	.0636	-.2677*** (-.4566)	.1941
Respondent's Age	.3213*** (.8202)	.6665	.1686*** (.3074)	.1029
Cur. Place of Residence	.0033 (.0062)	.0000	.0095 (.0111)	.0000
Respondent's Education	-.0669*** (-.1154)	.0116	-.1215** (-.1316)	.0171
Child. Place of Residence	.0440 (.0839)	.0000	-.0035 (-.0043)	.0000
Husband's Occu. Status	.0298 (.0567)	.0000	-.0709 (-.0779)	.0000
Constant	.1198		4.909	
R^2		.742		.314
Adjusted R^2		.739		.306
Number of Cases	459		265	

Standardized coefficients are in parentheses
*** Coefficients significant at .001 level
** Coefficients significant at .01 level
* Coefficients significant at .05 level

E. Summary: All Ethnic Groups Compared

Table 5.9 provides a summary of the regression findings for the various cultural groups for the young cohort. Irrespective of cultural background, the age variables (age at first birth and respondent's age) stand out as the most important determinants of fertility in Ghana among the young population. The socioeconomic characteristics show no significant impact for the young couples as a whole. Education is the next important determinant affecting fertility of the young ethnic populations. Education has significant effect on fertility among only three (the Twi, the FOA and the Northern groups) of the five ethnic groups.

Net marital duration is significant only for three ethnic groups--the Twi, the FOA and the Ga-Adangbe. Urban residence has significant effect on fertility of the Twi and the Ewe. Husband's managerial work is significant for only the Ewe. Urban childhood background fails to achieve statistical significant effect in any cultural group. The overall effects of the socioeconomic factors (education, urban residence, husband's managerial work and childhood urban residence) on fertility is not very great across the ethnic groups.

Table 5.9

Stepwise Regressions of Children Ever Born, Ethnic and Elite Groups, Aged 15-34 Ghana 1988

Determinants	Elite Group	Twi	Fante\Otther Akan	Ga-Adangbe	Ewe	Northern Group
Net Marital Duration	.2193*** (.6454)	.0567** (.1519)	.1110** (.2907)	.0685* (.2106)	.1501 (.0889)	.0700 (.0493)
Age at First Birth	-.0787 (-.0947)	-.2403*** (-.3469)	-.1915*** (-.2782)	-.2244*** (-.4725)	-.2852*** (-.5414)	-.2910*** (-.4529)
Respondent's Age	.0940 (.0932)	.2411*** (.5944)	.2044*** (.4660)	.1800*** (.4883)	.2929*** (.7756)	.3213*** (.8202)
Curr. Place of Residence	-.0615 (-.0821)	-.3462*** (-.0850)	-.0454 (-.0714)	-.0829 (-.1238)	-.3569** (-.0892)	.0033 (.0062)
Respondent's Education	-.0842 (-.1097)	-.0339** (-.0604)	-.0400** (-.2907)	-.0913 (-.1298)	-.0416 (-.0641)	-.0669*** (-.1154)
Child. Place of Residence	-.0597 (-.0793)	-.0159 (-.0256)	.0244 (.0401)	-.0600 (-.0897)	.0632 (.1065)	.0440 (.0839)
Husband's Occu. Status	.3841** (.1123)	-.0193 (-.0121)	9.656E-04 (.0016)	-.0711 (-.1016)	-.5869** (-.1011)	.0298 (.0567)
Constant	.2710	.6790	.2540	1.5769	.5295	-.1198
R-SQR	.4417	.623	.6475	.5649	.6499	.7417
Number of Cases	295	872	384	183	349	459

Standardized coefficients are presented in parentheses
*** Coefficients significant at .001 level
** Coefficients significant at .01 level
* Coefficients significant at .05 level

Net marital duration and age at first birth emerge as the most important determinants of fertility of the old age cohort across the various ethnic groups. Urban residence emerges as the most important socioeconomic determinant of fertility among three (the Twi, the Ga-Adangbe and the Ewe) of the five ethnic groups. Respondent's age and education have statistically significant effect on fertility for only the Northern groups. Husband's managerial work has significant effect only for the FOA (Table 5.10). The standardized regression coefficients suggest that for the young cohort irrespective of ethnic background, the age variables have the strongest effect on fertility.

However for the older population, age at first birth and net marital duration are most important in determining fertility across all ethnic groups. For both age cohorts across the ethnic groups, the rest of the determinants change their relative positions. Net marital duration and husband's managerial work status are the only statistically significant determinants of fertility in the standard group for the young age cohort. Husband's managerial work has a positive effect on fertility. For the young reference population, three determinants (age at first birth, urban residence and education) have significant effects on fertility.

Table 5.10
Stepwise Regression of Children Ever Born for the Ethnic and Elite Groups, Aged 35-49, Ghana 1988

Determinants	Elite Group	Twi	Fante\Other Akan	Ga-Adangbe	Ewe	Northern Groups
Net Marital	.0454	.1611***	.1797***	.2643***	.1089**	-.1092
Duration	(.0386)	(.3411)	(.4145)	(.6103)	(.2308)	(-.0612)
Age at First	-.1365**	-.1137**	-.1115**	-.0627	-.1356**	-.2677***
Birth	(-.2169)	(-.1564)	(-.1783)	(-.0664)	(-.2018)	(-.4566)
Respondent's	.1260	.1164	.0106	-.0535	.0158	.1686***
Age	(.1348)	(.0652)	(.0056)	(-.0498)	(.0809)	(.3074)
Curr. Place	-1.0406**	-1.872**	-.1123	-1.7910***	-1.0790**	.0095
of Residence	(-.2135)	(-.2074)	(-.1309)	(-.3212)	(-.1957)	(.0111)
Respondent's	-.1161**	-.0708	-.0778	-.0439	-.0871	-.1215**
Education	(-.2685)	(-.0757)	(-.0889)	(-.0543)	(-.0912)	(-.1316)
Child. Place	.0663	.0117	-.0673	-.0014	-.0635	-.0035
of Residence	(.0714)	(.0132)	(-.0815)	(-.0019)	(-.0683)	(-.0043)
Husband's	-.0538	-.0637	-1.5955***	.0332	-.1201	-.0709
Occu. Status	(-.0604)	(-.0714)	(-.1848)	(.0453)	(-.1300)	(-.0779)
Constant	9.1091	5.271	4.3844	1.1547	6.7569	4.9088
R-SQR	.2301	.2263	.3332	.4852	.1675	.3141
Number of Cases	141	416	218	108	198	265

Standardized coefficients are in parentheses
*** Coefficients significant at .001 level
** Coefficients significant at .01 level
* Coefficients significant at .05 level

Chapter VI
REGRESSION STANDARDIZATION AND DECOMPOSITION

Although standardization is not an important technique in the conceptualization of differential fertility, it is useful in the projection of fertility trends among groups under some assumptions and in the formulation of national policies. Ghana's high fertility in the context of observed variation between the elite and the ethnic groups, calls for an assessment of the possible outcome of equalization of significant variables between the elites and the non-elites. Although the fertility of the elite group is high by western standards, an understanding of the likely outcome by standardization is of direct relevance to planners and policy makers to attempt to integrate population variables into development planning. If it can be determined empirically that the differences between the elite group and the ethnic groups in fertility disappear once equalization of significant selected variable levels is carried out through regression standardization, it can guide the formulation of appropriate population and family planning policies.

There are various versions of regression standardization techniques (Jones and Kelley, 1984; Iams and Thorton, 1975; Coleman and Associates, 1972; Althauser and Wigler, 1972). Our analysis is based on the general demographic standardization model as follows:

$$E(F_A) = a + b_1X_{1(A)} + b_2X_{2(A)} + b_3X_{3(A)} + b_kX_{k(A)}$$

where:

$E(F_A)$ = Expected fertility of ethnic group A

b_i = Slope for variable i for the elite group (i=1,2...k)

$X_{i(A)}$ = Mean for variable i for ethnic group A (i= 1,2....k)

a = Intercept for equations generated by the regression models of the elite group.

k = Number of significant predictors.

A. Standardization

Based on the above standardization technique, mean values of significant social demographic variables for the ethnic groups are entered into the equations generated by the regression models for the standard group for both the young and the old age cohorts. Table 6.1 shows the observed and the expected average number of children ever born for each ethnic group for the young cohort.

The results reveal that each ethnic group would experience a reduction in family size. Most reduction is expected to occur in the FOA. The regression model for the young elite group, would result in an average reduction of 0.5-0.6 children among the ethnic groups. The percentage reductions in family size upon standardization vary across the cultural groups.

Table 6.1
Observed and Expected Average Number of Children Ever Born to Ethnic Groups (When the Elite Group is the Standard), Women Aged 15-34 Ghana 1988

Ethnic Groups	Observed Average	Expected Average	Difference (% Reduction)
Twi	2.657	2.166	-0.491 (18.47%)
Fante\Other Akan	2.771	2.162	-0.609 (21.97%)
Ga-Adangbe	2.601	2.133	-0.468 (17.99%)
Ewe	2.467	2.000	-0.467 (18.92%)
Northern Groups	2.558	2.145	-0.413 (16.14%)

Whereas equalization of the regression model to that of the young elite group will result in about 22 per cent reduction in family size for the FOA, it will lead to about 16 per cent reduction in fertility among the Northern groups.

The observed and expected average family size for the older age cohort is presented in table 6.2. Unlike the young cohort population, the most reduction is expected to occur in the Twi. The Twi would experience 11 per cent, while the old FOA will experience the least reduction of about 4 per cent. The Ga-Adangbe and the Ewe will experience about 8 and 7 per cent reductions in fertility respectively.

The findings suggest that irrespective of cultural background and age cohort, the expected fertility with the pattern of fertility of the elite group would have a declining effect on family size in Ghana. But the data also suggest that, the degree of expected reductions will vary across ethnic and age groups. More reductions are likely to occur among the young than among the old cohort.

Table 6.2

Observed and Expected Average Number of Children Ever Born to Ethnic Groups (When the Reference Group is the Standard), Women Aged 35-49, Ghana 1988

Ethnic Groups	Observed Average	Expected Average	Difference (% Reduction)
Twi	6.575	5.844	-0.731 (11.11%)
Fante\Other Akan	6.092	5.859	-0.233 (3.82%)
Ga-Adangbe	5.972	5.444	-0.528 (8.84%)
Ewe	6.172	5.763	-0.409 (6.62%)
Northern Groups	6.317	6.008	-0.309 (4.89%)

Table 6.3 presents the observed and the expected fertility of the elite and the ethnic groups respectively for the young cohort 15-34. Irrespective of ethnic background, the young population would experience a fertility lower than that of the reference group.This suggests that with socioeconomic mobility, the current fertility of the young population would be lower than the level of their elite counterpart. The reasons behind such an outcome may be the multidimensional- bio-social, cultural and socioeconomic characteristics of the cultural groups.

The greatest reduction would occur among the Ewe population (about 13 per cent). It is interesting to note that there is a differential reduction by kinship type. The patrilineal ethnic groups (the Ga-Adangbe, the Ewe and the Northern groups) would likely experience comparatively higher percentage reduction than the matrilineal groups (the Twi and the FOA).

Unlike the young age cohort, the old population of all cultural groups would have higher levels of fertility in comparison to the observed fertility of the older reference group. From table 6.4 we see that fertility of the ethnic groups will increase in the range of 10 to 21 per cent. Excepting, the Northern groups, the matrilineal ethnic groups (the Twi and the FOA) would experience a higher percentage increase in fertility than the patrilineal groups (Ga-Adangbe and the Ewe). This may be due the fact that the young cohort has not completed its fertility.

Tables 6.1 and 6.2 reveal low variation in family size, both observed and expected. Before adjustment the variation is in the range of 2.5 to 2.8 for the young and 6.0 to 6.6 fot the older; after adjustment it is in the range of 2.0 to 2.2 and 5.4 to 6.0 respectively. This means that the elites do not differ much from the ethnic groups. Only when fertility norms change due to secularization then we can expect some change.

Table 6.3

Observed (the Reference Group) and Expected (the Ethnic Groups) Average Number of Children Ever Born to Women Aged 15-34, Ghana 1988

Ethnic Groups	Obs. Average Fertility*	Exp. Average Fertility#	Difference (Exp.-Obs.)	Percent (- / +)
Twi	2.308	2.166	-.142	-6%
Fante\Other Akan	2.308	2.162	-.146	-6%
Ga-Adangbe	2.308	2.133	-.175	-8%
Ewe	2.308	2.000	-.308	-13%
Northern Groups	2.308	2.145	-.163	-7%

* Mean fertility of the elite (standard) group.

# Expected mean fertility of the ethnic groups after regression standardization.

Table 6.4

Observed (the Elite Group) and Expected (the Ethnic Groups) Average Number of Children Ever Born to Women Aged 35-49, Ghana 1988

Ethnic Groups	Obs. Average Fertility*	Exp. Average Fertility#	Difference (Exp.-Obs.)	Percent (- / +)
Twi	4.957	5.844	.887	18%
Fante\ Other Akan	4.957	5.859	.902	18%
Ga-Adangbe	4.957	5.444	.487	10%
Ewe	4.957	5.763	.806	16%
Northern Groups	4.957	6.008	1.051	21%

* Mean fertility of the reference (standard) group.

# Expected mean fertility of the ethnic groups after regression standardization.

Variation in traditional fertility-inhibiting practices and norms may provide clues to the demonstrated ethnic variations in fertility. Literature abounds with instances indicative of the importance of postpartum variables in explaining fertility differentials in developing countries (Gaisie, 1984, 1981; Mosley et al, 1982; Page and Lesthaeghe, 1981; Caldwell and Caldwell, 1977; Morgan, 1975; Romaniuc, 1968; Henin, 1968).

The bulk of evidence suggests that there is variation in the adoption of traditional child-spacing practices and norms across the ethnic groups due to differences in breastfeeding and postpartum abstinence (Benefo et al, 1994; Oheneba-Sakyi, 1993; Gaisie, 1981, 1968; Nukunya, 1975; Kaye, 1962). The Ewes are customarily expected not to resume sexual intercourse before 3 years following birth (Gaisie, 1968). The Ga-Adangbes recommend sexual abstinence until the child is weaned (Kaye, 1962). For example Oheneba-Sakyi (1993:130) has reported that "on average the Ga-Adangbes are fastest in having subsequent births, while Akans (the Twi and the FOA) and the Northern groups are the slowest." The prevalence of longer birth intervals among the Akan women (the Twi and the FOA) has been explained by their practice of prolonged breast-feeding, and to the Northern groups prolonged sexual abstinence after childbirth.

At another level, the marked pattern of child-spacing across ethnic groups through prolonged lactation and postpartum abstinence is posited as a mechanism of cultural adaptation to environmental and technological constraints. The Akans (the Twi and part of the FOA) practice traditional agriculture producing mainly tubers such as yams and cassava, and consume limited amounts of dairy products, resulting in protein deficiency as a major health problem (Sijim, 1993; UN, 1989). Therefore prolonged lactation, it is argued, is of paramount importance in curbing childhood and infant mortality. In addition to the concerns about child survival, the health of women, who constitute both productive and reproductive capital of the matrilineal kinship system, is protected against exhaustion by rapid procreation through child-spacing. The implication of this line of explanation is that duration of the postpartum taboo on sexual intercourse during the lactation period is related to the society's protein intake (Lesthaeghe, 1989:14; Murdock, 1967:145; Whiting, 1964:521).

Contrasting traditional kinship organizational bases across ethnic groups may provide insights into the general pattern of fertility that cannot be accounted for by socioeconomic variation. The matrilineal groups (the Twi and the FOA) tend to show small reduction and high fertility increase among the younger and the older populations respectively (Tables 6.3 and 6.4). This may be attributable to the matrilineal system of succession and inheritance.

The matrilineal system of inheritance makes it possible for brothers to inherit from brothers, sisters to inherit from sisters and nephews to inherit from uncles.

However in the absence of a suitable successor (based on seniority and competence) in a direct lineage, children from within the immediate extended family are chosen to receive inheritance (Tufuor and Donkor, 1989). This system of inheritance promotes larger family size, particularly among the older populations. Large families are a mechanism to provide suitable heirs at all times and to ensure concentration of family property in the hands of direct descendants from the family line. Therefore the observed variations in fertility levels as reported in this study between the patrilineal and matrilineal ethnic groups may be due to the bilineal system of inheritance of property practised by the matrilineal groups (the Twi and the FOA) (Amoateng, 1987).

Another explanation of the fertility levels may be an outcome of ethnic adaptation to a particular situation of deprivation of economic resources, opportunities for educational and occupational mobility, and participation in decision-making, etc. This is reinforced by a series of values, norms and beliefs arising from the deprived situation. Thus ethnic fertility levels are perceived as outcomes of adaptation to the existential situations (Askham, 1975). The deprivation may exercise its influence primarily through the characteristics of the extended family as a social system which varies from one ethnic culture to another.

The importance of extended family may be reflected in the attitudes towards the practice of birth control. Although Oheneba-Sakyi (1993) has reported a statistically non significant effect of ethnicity on contraceptive use in Ghana, the role of contraception in shaping ethnic fertility differences cannot be neglected. Since regional variation in socioeconomic development follows ethnic boundaries, regional characteristics affect the fertility level of an ethnic group. In regions where health services are rudimentary, and infant and child mortality high, participation in birth control is bound to be limited (National Research Council, 1993; Appiah, 1985).

Effective contraceptive practices in ethnic groups may be operating through the mechanisms of formal education and level of urbanization which reflect the varying degrees of deprivation among the cultural groups. Therefore the observed and the expected fertility differences between the ethnic and the reference groups may be attributable to differential degree of knowledge and practice of birth control. The coastal groups (the Ga-Adangbe, the FOA) which occupy the regions with the heaviest concentration of health facilities, and socioeconomic and industrial development in the country may have adapted to cultural and scientific innovation from the western world. The interior and the northern groups (the Twi, Ewe and the Northern groups) may be more traditional in their childbearing practices.

Another plausible explanation may be the effect of religious beliefs and practices. In Ghana three religions dominate: Moslem, Traditional and Christianity. The level of ethnic fertility is influenced by the dominant religion of the group. The Northern groups are predominantly Moslem and the southern counterparts (the Twi, the Ga-Adangbe, the Ewe and the FOA) Christians. The philosophy and attitude towards contraception, abortion and marriage are determined by the religious beliefs and practices. Tawiah (1984) found that compared to all religious groups in Ghana, Moslems have the lowest fertility, while the Christians the highest.

Christian women are mostly monogamous women. Further, they may have had benefited from improvements in sanitation, hygiene and education brought about by the Christian missionaries. Moslem, on the other hand, restrict the number of wives to four, whereas there are no restrictions for the traditionalists. The low fertility of the Moslems may have to be attributed to strict adherence to postpartum abstinence, prolonged breastfeeding and poor health that inhibits fertility (Tawiah, 1984). It is worth noting that Islam and Christianity, which are recent importations and pro-natalist, have replaced the traditional beliefs which, despite the absence of fertility control, checked fertility through cultural taboos and restrictions. These two religions, by their growth in Ghana, and fostering attitudes and opinions among couples, have undoubtedly contributed to the high fertility among the ethnic groups.

B. Decomposition

Decomposition analysis through regression standardization seeks to partition differences in fertility between a standard and other groups. Decomposition anlaysis by Coleman and Associates (1972), Althauser and Wigler (1972), Jone and Kelley

(1984) tend to partition the observed differences into means variable term (measured by coefficients), interaction term, slope term and error term (unmeasured component). In this research we seek to decompose the observed differentials between the ethnic and the elite groups into two main components: changes in mean of the explanatory variables and that of residuals. The residual component here accounts for all the other components besides the mean variable levels. Our decomposition anlaysis utilizes the following formular:

$$F_A - F_S = F_A - E(F_A) \quad \ldots\ldots\ldots\ldots \text{(A)}$$

$$+ E(F_A) - F_S \quad \ldots\ldots\ldots\ldots \text{(B)}$$

where:

F_A = Observed average fertility of an ethnic group

F_S = Observed average fertility of the elite group

$E(F_A)$ = Expected average fertility of an ethnic group after standardization

Table 6.5 shows the results of difference between the family size of the ethnic and the elite groups for the young cohort decomposed into changes in means of the explanatory variables (B) and residuals (A). The figures corresponding to the five ethnic groups suggest that change in the means of determinant variables would result in average reductions across the cultural groups. For example, while the changes in the means would produce an average reduction of 0.308 of a child for the Ewe, it would induce a decline of 0.142 among the Twi.

The depressing effect of the changes in the means of the determinants among the young population across the ethnic groups is intriguing. Considering the significant variables which were involved in the standardization (mostly demographic: age at first birth, net marital duration and age), then this unusual finding may be explained in terms of biological factors especially malnutrition.

Studies have shown that malnutrition is a common feature in Ghanaian society (Sijim, 1993; Alderman, 1990; UN, 1989; GDHS Final Report, 1989). With the exception of the educated high income urban couples, balanced diet is hardly attained in Ghanaian communities. Diets are determined by the types of crops grown locally. For example, while the dietary intake of the Twi, and the Ewe and majority of the FOA inhabiting the forest zone is mostly made up of starchy staples, the Northern groups, who occupy the savanna, consume mostly cereals.

Studies have shown that in undernourished populations, the age at menarche is later than the well-nourished populations and therefore malnutrition may have negative effect on reproduction (Frisch, 1978, 1975). Therefore the negative effect of the mean difference in characteristics between the educated working families and their poor uneducated rural counterparts may be a function of the nutritional effect on age at menarche in Ghana.

Table 6.5
Regression Decomposition of Children Ever Born to Ethnic Groups (When the Elite Group is the Standard), Women Aged 15-34, Ghana 1988

Ethnic Groups	Difference Due to Change in Means	Difference Due to Residuals
Twi	-.142	.491
Fante\ Other Akan	-.146	.609
Ga-Adangbe	-.175	.468
Ewe	-.308	.467
Northern Groups	-.163	.413

The results of the regression decomposition with respect to changes in mean and residuals for the old age cohort are presented in table 6.6. Unlike the young population, changes in means of the explanatory factors and the residuals demonstrate a moderate increase in fertility across the ethnic groups for the old population.

With the exception of the Ga-Adangbe, all the ethnic groups would experience higher fertility due to change in means than that induced by the residuals. The differential impact of change in means as suggested by the data may be attributable to the different levels of fertility among the two age groups. While the old cohort exhibits completed fertility, that of the young is incomplete and may have effect on the direction and importance of the variables in shaping fertility.

Table 6.6

Regression Decomposition Children Ever Born to Ethnic Groups (When the Elite Group is the Standard), Women Aged 34-39, Ghana 1988

Ethnic Groups	Difference Due to Change in Means	Difference Due to Residuals
Twi	.887	.731
Fante\ Other Akan	.902	.233
Ga-Adangbe	.487	.528
Ewe	.806	.409
Northern Groups	1.051	.309

Chapter VII
SOCIAL AND POLICY IMPLICATIONS

In searching for policy implications, we examine how significant determinants in the regression models of fertility of various ethnic groups would help in shaping group-specific policies. This is accomplished by an analysis of elasticities of the determinants of family size among the young age cohort. Elasticity as used in this study connotes the degree of responsiveness of proportional change in fertility to proportional changes in explanatory variables. Given that:

y = dependent variable (fertility)

x = independent variable (an explanatory variable);

Then elasticity of y with respect to x is given by the equation:

$$x/y \, (dy/dx)$$

It is easy to see that this is :

Proportional Change in y /Proportional Change in x.

Elasticity of fertility (F) is X/F multiplied by DF/DX. Because more than one variable determines F, the elasticities so computed are partial elasticities.

Based on the regression models that have emerged from the analysis among the various cultural groups (Tables 5.11 and 5.12), the partial elasticity of fertility with respect to explanatory variables are presented in table 7.1. Although the elasticity coefficients are partial, they can guide policy formulation as to where government efforts should be directed among the various ethnic groups.

A. Marital Factors

Table 7.1 indicates that irrespective of cultural background, a unit increase in the age at first birth will likely effect substantial reductions in the family size in Ghana. With a rising number of "out of wed lock" births in Ghana (GDHS, 1988), it is quite evident that age at first birth is likely to affect number of children a woman eventually bears. In a low contracepting society like Ghana the relationship is quite inevitable: the later a woman starts having children, the fewer years she is at risk of pregnancy, and thus the smaller her completed family size to be.

Equally important but related factor is the likely impact of a reduction in net marital duration on fertility in Ghana. Although net marital duration is significant determinant of reproduction among three of the five groups, our analysis shows that one year average reduction will affect fertility substantially. The contribution of marital factors in shaping Ghanaian fertility cannot be ignored.

The importance of age at marriage in shaping net marital duration as revealed by the data suggests that an understanding of the determinants of age at marriage is crucial to fertility decline in Ghana. Understanding of factors, directly and indirectly shaping initiation of marriage will help in the formulation of population policies in Ghana.

Table 7.1
Partial Elasticity With Respect to the Significant Determinants Among the Ethnic Groups, Women Aged 15-34 Ghana 1988

Determinants	Twi	Fante\Other Akan	Ga-Adangbe	Ewe	Northern Groups
Net Marital Duration	-.481	-.886	-.674		
Age at First Birth	-2.443	-1.845	-3.429	-4.185	-3.345
Current Place of Residence	-.010			-.898	
Respondent's Education	-.067	-.427			-.075
Husband's Occu. Status				-.004	

In the short-run, it is not possible to raise age at first marriage significantly as a means of curtailing net marital duration and hence fertility. However marital fertility can be minimised significantly by raising the status of women in various cultural communities to a level that could promote a radical shift from traditional to new values. To accomplish this long-term goal, men in the various cultural societies, have a prominent role to play.

In Ghana where women are perceived primarily as instruments of procreation, the attitude and role of husbands are crucial. Males are the main decision makers in the family. Therefore, in order to raise the status of women, great attention should be given to the role of men in the family. Unfortunately this aspect of population regulation has not been given any attention in Ghana. Appropriate gender sensitive policies could be devised to help various cultural groups alleviate the uncontrolled fertility and early marriage. For example male centred contraceptive dissemination programmes could be encouraged concurrently with marriage reduction and legislation of increase in minimum age at marriage.

B. Socioeconomic Factors

Although the socioeconomic factors do not emerge as important determinants of fertility as suggested in the Western literature, some of them (education and urban residence) show up. Also the policy relevance of such factors in fertility regulation in the Western and some Asian countries, they are considered in our elasticity analysis for long-term planning.

The elasticity analysis suggests that a one year increase in the average educational level of the Twi, the FOA and the Northern groups will translate into some reductions in fertility. The greatest reduction is likely to occur among the Fante/Other Akan .43 and .07 among the Twi and Northern groups. Schooling can induce tradeoff between quntitity and quality children. Ainsworth (1994) has found evidence of such a tradeoff in both rural and urban Ghana. Higher incomes are associated with higher child schooling and lower fertility.

One of the explanations of the negative association between education and fertility suggests that more years of schooling delay entry into reproduction and enhances economic opportunities and independence. Female participation in primary and secondary schools has improved in Ghana in the past thirty years, but has a long way to go to effect a fertility decline as reviewed above. The chances for girls to pursue higher education worsen as they progress from grade to grade. While female enrolment at the primary level represent 59.9%, of the level of males, this figure drops precipitously to just 3.2 per cent of the male enrolment at higher levels of education (cited in Manu, 1993).

Further, under the government's educational reform policies, the duration of basic education has been reduced from 10-15 to 9 years (GDHS Final Report, 1994).

The apparent irrelevance of higher education to guaranteed economic security (high unemployment) especially among university graduates, discourages the demand for higher education. These factors may mitigate against education in effecting fertility decline in Ghana as suggested by the data.

Paradoxically as young girls stay in school longer and delay ages at first marriage and birth, factors that contribute to lower fertility in the long-run, they are increasingly likely to engage in premarital sexual relations and thus exposed to the associated risk of unwanted pregnancies. Therefore there is the need for an integrated population programme, particularly, family planning among the young population. Without appropriate effective programmes for sexuality and gender education, and without family planning and other reproductive health services, young people will remain at risk (Hawkins and Meshesha, 1994).

The next socioeconomic determinant of fertility is urban residence. The data suggest that a ten percent increase in urbanization level for the Twis and the Ewes will induce sizable reductions in family size especially among the Ewes. Although husband's managerial occupation has a significant negative effect on fertility only among the Ewes, our elasticity reveals insignificant effect on fertility.

Although the determinants of completed fertility (old cohort) has less policy relevance, it can provide clues to the forces which tend to influence reproductive behaviour in later life. Net marital duration, age at first birth and urban residence do emerge as the main forces shaping completed fertility. Given the results of standardization analysis, our data suggest that irrespective, of ethnic background, in the long-run an increase in female education and opportunity for female employment will result in smaller family size. Employment outside the home has the potential to reduce women's dependence on others; provide alternative sources of social identity and support; motivate women to terminate unsatisfactory relationships and space or limit births.

For the full benefits of female employment outside the home to be realized in the long-run, underlying institutional structures that govern the value of women's labour in the country and conditions under which women engage in economic activity must change. A myriad of factors such as type of occupation, income, motivation, whether working for someone or is self-employed and others interact to determine the effect of employment on reproductive outcomes.

Given the social organization of Ghanaian society, the greatest benefits are likely to accrue when women not only earn an income, but also directly control that income and achieve economic security as a result. Increase of women's education and employment should be seen as dependent on strategies for female empowerment that leads to their increased autonomy and decision- making power, providing them with an alternative power base that is independent of male domination.

Thus increasing women's education, improving their income-earning opportunities, and breaking down sociocultural barriers to their health and social mobility are necessary but not sufficient for achieving better health and reduced family size families. These short-term individual-level changes are unlikely to lead to the desired gains without concomitant improvement in women's physical and social environment and women's empowerment in familial relationship.

Education, employment and urbanization take a long time to create changes in social behavior. Late age at first birth will demand preventive measures and techniques. Therefore a long-term strong population regulation programme, especially family planning, should provide the knowledge and the means of preventing unwanted pregnancies. Availability of contraception through a strong family planning programme will help women to increase their health and to increase chances of infant survivorship. This will instil confidence in couples as they can be sure their children will survive to adulthood.

The difference in the factors determining fertility among the groups suggests that for family planning programmes to achieve a respectable measure of success, the programmes must take clues from the cultural milieu. The programmes must be Ghanaian and particularly ethnic in outlook. Rather than policy makers regarding all Ghanaians as the same with equal social, cultural, economic and political circumstances, groups must be seen as different with different unique situational circumstances or environment. For instance, ethnic-specific programmes can help in the formulation of population policies that are better suited to the conditions affecting the behavior of the different ethnic groups. Population policies must incorporate group norms and situational conditions in planning and implementation of family planning programmes.

The study suggests that achieving decline in fertility in Ghana will require a large number of interrelated actions ranging from the formulation of comprehensive socioeconomic policies to the identification of group specific actions. Designing policies that will arrest the population problem in Ghana will require good strategies of different social policies on fertility among different cultural groups.

Also the standardization and the decomposition analyses suggest that socioeconomic improvement to the level of the standard group ultimately will have some impact on people's thought processes, world view and reproductive behaviour. Deteriorating economic conditions in Ghana place young females at risk of unsafe sexual encounters. Poverty is the direct cause of prostitution among the young in the country.

Reports abound particularly in countries of Sub-Saharan Africa undergoing structural adjustment programmes (eg. Ghana) of young women conceding to pressures from older men and trading sexual favours for school fees, food, transportation, and clothing in order to continue their education, support their families, or simply survive (Hawkins, Ojakaa and Meshesha, 1992; Standing, 1989).

Therefore the most important government activity in reducing fertility is good public management of the economy. Good management includes implementing policies and programmes which ensure broad growth, that is, growth which will benefit all groups, particularly the poor young females.

This demands that national development policies should be carved out in such a way that the involvement of women is encouraged at both personal and community levels. Also social justice should be one of the cardinal objectives of all development programmes. Programmes must be devised and implemented in such a manner that irrespective of region and place of residence, groups will benefit equally. Broad-based growth which enlarges the economic opportunities of the poor is an essential complement to programmes directly aimed at reducing fertility. The basic reality is that adequate management of the economy is an appropriate role of the government and will help reduce fertility as the welfare of the bottom social groups grows.

A two-level development programme can be pursued to accomplish some of these goals. The role of Non-Governmental Organizations (NGO) can be instrumental in the first level. Women can be encouraged to participate in informal skill training regardless of educational background. The NGOs with their financial and human resources can stress and make birth control an integral part of their programme. This can help women to create their own jobs and raise their status. Given the current high unemployment even among the educated women, this approach will instil confidence into and suggest that one can improve her status other than through formal education or reliance on a husband.

Also in the context of the existing policy of compulsory education, free education especially for women should be reinforced. The educational curriculum should be tailored towards self-employment in the formal sector and the importance of birth control should be central to the educational system. In doing so the actual knowledge and benefits of small family size based on the interpretation of various cultural norms shall be taught. Until the rationale behind the cultural requirements of high fertility is removed from various ethnic groups the effect of education and urbanization cannot be actualized.

Given that the economic and time cost of high fertility do not necessarily fall on biological parents, demand for family planning services may be limited in Ghanaian society where completed fertility can be manipulated by institutions such as fosterage. The value of children as productive members of the household economy from an early age and their obligation to provide old age security to their parents also discourage men and women from limiting the number of offspring.

In this context, pension and other programmes that provide some form of security in old age, or that otherwise improves the access of parents to capital while reducing the benefits of children as providers of old-age security should be given serious consideration. If all other things remain the same, such policies can raise their relative cost. Like many social programmes, pensions are also generally associated with increase in the welfare of the poor. Therefore well coordinated policies and programmes to provide social and livelihood security, education and improved agricultural and domestic technologies may help facilitate change in reproductive expectations and outcome.

The relationship between social, economic, demographic and political change and social behaviour, eg. reproductive behaviour as suggested in our framework, is admittedly complex, especially in a transitional society like Ghana. As our study has demonstrated, in every ethnic group there are special social, economic, cultural, political and religious factors that have implications for fertility, as do variations in the means and logic for reducing it. However, there is increasing evidence from developed and some developing countries that strategies and policies that cause the greatest improvements in the welfare of the entire population also have the greatest effect on reducing fertility levels.

Therefore Ghana's development policies and programmes should be geared towards social justice. With appropriate short and long term social and economic policies which benefit women, the role of age at first birth and net marital duration can be minimized. Improvement in the social status, bargaining power, independence and economic opportunities of the poor majority and especially women, will offer alternatives to marriage and childbearing to couples. The elasticity analysis reinforces the need for group-specific models, policies and programmes if family size is to decline in Ghana.

Chapter VIII
FINDINGS AND DIRECTIONS OF FUTURE RESEARCH

A. Summary of Findings

This study has attempted to analyse ethnic fertility differences and their determinants of ever-married women in their reproductive ages (15 to 45) broadly divided into young (15-34) and old (35-45) age cohorts. Data from the Ghana Demographic and Health Survey 1988 have been used in this study. To facilitate comparisons, an elite or standard group has been constructed based on husband's education and women's work status. Based on the theoretical framework of this study, the following broad generalizations were expected from this study:

a) the average fertility is lower among cultural groups with high socioeconomic status;

b) the elite or standard group (reference group) has lower fertility than that of the ethnic groups;

c) overall fertility level has negative association with group's socioeconomic position.

For both age groups, while generalization (b) is found to exist, (a) and (c) are partially existent. This is especially so among the older cohort. On average, the fertility difference between the ethnic and the elite groups in Ghana is not substantial in magnitude among the younger population, however substantial differential exits in the case of the old cohort.

Generally two patterns of fertility can be discerned from the data. For the younger population, a distinct inverse relationship with ethnic group's position is found among two of the ethnic groups (the Ewe and the Northern groups). These two poor groups tend to demonstrate comparatively lower fertility than other groups. This unexpected finding may be accounted for by differences in nutrition among the young people. This suggests that among the young population, people from the middle stratum of the society are more likely than the poor to serve as the generators of high levels of fertility.

A multivariate analysis has been performed with some selected demographic and social determinants to explore their differential association with fertility among the young and the old age cohorts. Children ever born was used as the dependent variable. The correlates included in the multivariate models are: female education, current and childhood places of residence, husband's occupational status, net marital duration, age at first birth and respondent's age.

The findings reveal that for the young age cohort, irrespective of cultural background, demographic variables, particularly age at first birth, emerge as the most important determinants of fertility. The childhood place of residence has no effect on the level of birth performance irrespective of the ethnic group. The overall effects of the selected socioeconomic determinants (female education, current place of residence and husband's occupation) on children ever born do not vary greatly across the ethnic groups among the young. The relatively weaker effect of the selected socioeconomic predictors indicates the overall low level of these conditions and also the dominance of cultural factors that have been prevailing in the ethnic communities for a long time.

The significance levels and directions in effect of some of the determinants indicate patterns that are somewhat contrary to expectation among some of the ethnic groups and put a limitation on the explanation. For instance, husband's managerial status significantly and positively affects fertility of the young elite group. This calls into question the link between social mobility and fertility in Ghana. Also husband's managerial status has non significant positive effect on family size among the old Ga-Adangbes. Further our data demonstrate that urban residence has positive effect on family size among the Northern groups.

The causes of these unusual findings may be located, as suggested in the framework guiding this research, in a mixture of social, political and cultural institutions. This suggests that the mechanism through which ethnicity acts on fertility may be located in the interplay between socioeconomic and cultural factors and the interrelationships within cultural factors. Adaptation and conformity to traditional norms and values are expected among even the elites who have interest in traditional institutions such as chieftaincy.

The more the people (especially the women) abide by the traditional social and cultural customs, the more the respect they earn from their community. In accordance with the religious and ethnic codes of conduct, women in Ghana irrespective socioeconomic background, are viewed as childbearers more than anything else. In both traditional and religious senses, the more a woman reproduces the more respect she commands in society.

The findings suggest that irrespective of ethnic background, fertility of young Ghanaians is determined by their physiological age and age at first birth. However, other determinants of fertility depend on the group's level of socioeconomic deprivation. This suggests that despite the same overall rationale behind reproduction, the factors shaping reproduction among members of different ethnic groups in Ghana do vary. Therefore one model of fertility is inadequate in understanding ethnic fertility in Ghana.

The elite women may have developed a mechanism which allow them to combine childbearing with their lifestyle. Some may call on their immediate family members (mothers, younger sisters and in-laws) as care takers in exchange for security and support. This explanation makes a lot of sense in terms of resources. Members of the elite group, especially those with husbands in managerial positions, can make enough money to support family members while meeting their assumed socio-cultural obligations.

For the older population, a different picture does emerge. Age at first birth and net marital duration emerge as the most important determinant of fertility of the older age cohort across the various ethnic groups. It is seen that the age at first birth and net marital duration are of the greatest importance in determining fertility across all younger ethnic populations. Urban residence takes over from education as the most important socioeconomic determinant of fertility for the old cohort.

It has to be stated that until now all the expectations of the determinants of ethnic fertility are based on household model of fertility drawn from experiences of western industrialized countries. In trying to understand ethnic fertility differences, we cannot assume the situation in Ghana is similar to that in western societies. The understanding of ethnic fertility differences in Ghana in the context of minority hypothesis, based purely on household economic model without consideration of macro level forces, is unrealistic. Because of the country's historical migration experience, the search for an understanding of ethnic reproductive behaviour in the context of minority-majority explanation as espoused by western researchers would be a fruitless attempt.

B. Conceptual and Methodological Implications

The suggested conceptual framework guiding this study is based on a socio-political demographic perspective in explaining ethnic fertility in Ghana. The framework asserts that at the micro level an individual's behaviour is distinguished basically by a lack of resources or social deprivation. In particular, stress is laid upon the economic position of the stratum. It maintains that there is a unique separate ethnic subculture due to social, economic and political deprivation. Ethnic culture is reinforced by socialization of those within the deprived situation into a system of values, beliefs and norms.

The social, cultural, economic and political (both internal and international) conditions influence development and population policies. The macro-level conditions perpetuate the existing social and cultural institutions, which in turn significantly shape the individual fertility behaviour. The socio-political demographic perspective offers an important contribution to a better formulation and evaluation of the country's almost unsuccessful population regulation programmes and policies, particularly, in family planning.

The conceptual framework guiding this study is not new in demographic research, but this study represents the first application of the approach to subgroup fertility analysis in Ghana. The utility of the suggested framework lies in its integration of various aspects of the conventional approaches. It gives a new look on the existing demographic wisdom about Africa, and hence policy formulation about the region. For instance, the existing knowledge shows that ethnic fertility is inversely associated with the level of socioeconomic development. From this, the conclusion is that groups inhabiting developed regions are likely to have lower fertility. Rather than analyzing a social group's behaviour such as reproduction, based on only one dimension which does not disclose the essence of the group's relationship to fertility, our framework offers a multi-dimensional approach.

In an era when the developing countries are challenged to find the right mix of policies and programmes to bring about progress in as many areas as possible, the significance of our framework which calls for group-specific models in understanding social behaviour including reproduction cannot be neglected. The framework can guide the selection of policy options. For example, governments need to target subsidies more carefully to reach the disadvantaged groups. Depending on group's demographic characteristics, social setting may need to focus on improving health care, family planning or social investment in female education and employment opportunities.

Our conceptual framework highlights several important points. First, group needs are diverse and that these needs change over time, therefore no single set of policy prescriptions applies to all groups. Secondly, it suggests that for meaningful fertility decline, the policies and programmes should take place at the subgroup level, where each group must be allocated resources and programmes based on its own constellation of social, economic and political needs.

C. Limitations of the Study

The major limitation of this study is related to the data set. Absence of pertinent macro-level data and socio-psychological variables of group membership of the various groups has prevented us from putting the whole conceptual model into test. Measurement problems in the data set are another key limitation. Due to measurement and response problems, some pertinent variables such as desired family size and mortality and income were excluded from the analysis. The high percentage of non response regarding desired number of children demanded its exclusion from the analysis.

Considering the purpose guiding this study, census data supplemented by migration data would increase the precision of the estimates reported in this study. The validity of the procedure for the grouping may be questioned in certain cases, for example the Northern groups. In the absence of established groupings, our method seem to be the best to handle the issue. The region, the language and the culture seem to characterize ethnic groups in Ghana.

Another setback to this study is the inability to control for the impact of migration on ethnic reproductive tendencies. The issue of cross-cultural marriage, especially among matrilineal and patrilineal couples, poses another hinderance to the analysis. Lack of information on these important variables, coupled with problems in data measurement have constrained the analysis considerably.

D. Directions for Future Research

Future studies utilizing data from Ghana are needed and in future a more exhaustive list of variables at both micro and macro levels is required. As a further extension of this study, inclusion of the background and historical data would provide a better analysis.

Future studies should attempt to study the effect of migration on fertility. Two separate studies, one for people who never moved, and another for those who moved among the ethnic groups might provide insight into the influence of migration on reproductive tendencies. Information on fertility parity of the cultural groups and occupational status is required to resolve the causal direction of the effect of occupation on fertility.

The suggested framework can be used in the understanding of urban and rural subgroups reproductive behaviour in Ghana. Contextual-level data supplemented by an analysis of individual level data on socio-psychological dimensions of group membership for the various groups can shed light on the framework tested here. Future studies should also incorporate direct measures of income (potential and relative), female employment as well as cultural factors to clarify the relative effects of socioeconomic or the household altruistic model on Ghanaian fertility.

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APPENDIX

Table A.2.1.

Regional Ethnic Distribution and Variations in Incidence of Poverty, Physical Quality of Life Index and Modern Contraceptive Prevalence Rates, Ghana

Ethnic Regional Distribution	Incidence of Poverty (1975)*	Physical Quality of Life Index (PQLI)*	Modern Contraceptive Prevalence Rates#
Twi:			
Ashanti	68.76	.862	1.3
Brong Ahafo	82.63	.862	0.0
Eastern	75.51	.893	0.6
Fante\Other Akan:			
Western	62.00	.778	-2.0
Central	78.17	.693	-0.3
Ga-Adangbe:			
Greater Accra	49.51	1.000	5.4
Ewe:			
Volta	92.36	.778	-1.3
Northern Groups:			
Upper	88.46	.265	-4.5
Northern	90.28	.240	-4.5

Notes: **Physical quality of life index combines infant mortality, the level of literacy and the expectation of life at birth.**

Sources: *** Adapted from Boateng et al (1990, p. 29-30). (Data: National Household Budget Survey, (1970; 1974/75).**

# The figures for each region represent percentage point deviation from the national average of 5.2. Adapted from National Research Council (1993, p. 27). (Data: GDHS, 1988).

Table A.5.1

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE TWI EVER-MARRIED WOMEN AGED 15-34, GHANA, 1988
(N=872)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.155**	-.095**	-.092**	.063	.649***	-.304**	.743***
X2		1.000	.228***	.101***	.078**	.039	.237***	-.104***
X3			1.000	.084**	.057*	.063*	.093**	-.011
X4				1.000	-.027	-.072**	.030	-.070**
X5					1.000	.154***	.056*	.083**
X6						1.000	.180***	.822***
X7							1.000	-.276***
X8								1.000

Source: GDHS, 1988 data analyses.

Notes:
X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.2
CORRELATION MATRIX OF VARIABLES INCLUDED IN MODEL FERTILITY FOR THE FANTE\OTHER AKAN FOR EVER-MARRIED WOMEN AGED 15-34, GHANA 1988
(N=384)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.185***	-.085*	-.074	-.009	.669***	-.340***	.779***
X2		1.000	.335***	.168***	.205***	-.005	.239***	-.127**
X3			1.000	.167***	.066	.081*	.177	-.025
X4				1.000	-.063	-.027	.154***	-.093*
X5					1.000	.061	.082*	.001
X6						1.000	.126**	.817***
X7							1.000	-.350***
X8								1.000

Source: GDHS, 1988 data analyses.

Note: X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.3
CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE GA-ADANGBE EVER-MARRIED WOMEN AGED 15-34, GHANA, 1988
(N=183)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.205**	-.123*	-.074	-.092	.493***	-.377***	.692***
X2		1.000	.399***	.190**	.334***	.119*	.347***	-.089
X3			1.000	.350***	.346***	.062	.155*	.002
X4				1.000	.167**	.103	.148*	.017
X5					1.000	.217**	.280***	-.013
X6						1.000	.311***	.723***
X7							1.000	-.271***
X8								1.000

Source:GDHS, 1988 data analyses.

Note: X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.4

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE EWE OF EVER-MARRIED WOMEN AGED 15-34, GHANA 1988

(N=349)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.145**	-.094*	.023	-.032	.599***	-.321***	.764***
X2		1.000	.218***	-.008	.312***	.074	.217***	-.041
X3			1.000	-.021	.112*	.038	.043	-.005
X4				1.000	-.031	-.004	.078	-.044
X5					1.000	.138**	.051	.080*
X6						1.000	.295***	.721***
X7							1.000	-.358***
X8								1.000

Source: GDHS, 1988 data analyses.

Note: X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.5
CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE NORTHERN GROUPS OF EVER-MARRIED WOMEN AGED 15-34, GHANA 1988

(N=459)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.167***	-.073*	-.037	-.044	.727***	-.278***	.809***
X2		1.000	.247***	.242***	.250***	-.047	.030	-.108**
X3			1.000	.203***	.212***	-.044	.025	-.036
X4				1.000	.159***	-.057	.009	-.050
X5					1.000	-.050	.004	-.047
X6						1.000	.217***	.822***
X7							1.000	-.250***
X8								1.000

Source: GDHS, 1988 data analyses.

Note:
X1= Children Ever Born.
X2= Respondfent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.6

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE REFERENCE GROUP OF EVER-MARRIED WOMEN, AGED 15-34 GHANA 1988

(N=295)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.229***	-.057	-.144**	.169**	.497***	-.351***	.655***
X2		1.000	.221***	.079	-.009	.081	.397***	-.229***
X3			1.000	.110**	-.061	.153**	.076	.017
X4				1.000	-.043	-.092*	.086	-.124**
X5					1.000	.133**	-.045	.087
X6						1.000	.198***	.667***
X7							1.000	-.437***
X8								1.000

Source: GDHS, 1988 data analyses.

Note:
X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.7

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE TWI OF EVER-MARRIED WOMEN AGED 35-49, GHANA 1988

(N=416)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.221***	-.194***	-.073*	-.107**	.281***	-.316***	.400***
X2		1.000	.118**	.133**	.226***	-.210***	.180***	-.309***
X3			1.000	.082*	.148***	.065	.031	.053
X4				1.000	-.023	-.068	.133**	-.137
X5					1.000	-.065*	-.100	-.047
X6						1.000	-.003	.779***
X7							1.000	-.449**
X8								1.000

Source: GHDHS, 1988 data analyses.

Note: X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** P <.001; ** P <.01; * P <.05

Table A.5.8

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR FANTE\OTHER AKAN EVER-MARRIED WOMEN AGED 35-49, GHANA 1988

(N=218)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.234***	-.224***	-.126*	-.197**	.350***	-.442***	.526***
X2		1.000	.384***	.103*	.297***	.166**	.159**	-.201***
X3			1.000	.075	.279***	-.095	.125*	-.116*
X4				1.000	.140*	-.048	.067	-.054
X5					1.000	-.018	.045	-.010
X6						1.000	-.124*	.779***
X7							1.000	-.615***
X8								1.000

Source: GDHS, 1988 data analyses.

Note: X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First birth.
X8= Net Marital Duration.

*** $p < .001$; ** $p < .01$; * $p < .05$

Table A.5.9
CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE GA-ADANGBE EVER-MARRIED WOMEN AGED 35-49, GHANA, 1988
(N=108)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.357***	-.336***	-.022	-.040	.381***	-.483***	.618***
X2		1.000	.220**	.090	.397***	-.276**	.313***	-.412***
X3			1.000	.066	.210**	.126	.218**	-.025
X4				1.000	.204**	.085	.136	.001
X5					1.000	.054	.086	-.007
X6						1.000	-.109	.730***
X7							1.000	-.617***
X8								1.000

Source: GDHS, 1988 data analyses.

Note: X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.10

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE EWE OF EVER-MARRIED WOMEN AGED 35-49, GHANA, 1988

(N=198)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.196***	-.168**	-.085	-.155**	.177	-.306***	.315***
X2		1.000	.192**	-.030	.251***	-.330**	.160**	-.203**
X3			1.000	.071	.086	.031	-.047	.078
X4				1.000	-.064	-.097*	.031	-.012
X5					1.000	-.105*	-.011	-.102*
X6						1.000	.090	.721***
X7							1.000	-.492***
X8								1.000

Source: GDHS, 1988 data analyses.

Note:
X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.11

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR NORTHERN GROUPS OF EVER-MARRIED WOMEN AGED 35-49, GHANA 1988

(N=265)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.175**	-.072	-.048	-.118**	.293***	-.441***	.413***
X2		1.000	.258	.062	.410***	-.105**	.023	-.112**
X3			1.000	.295***	.147***	-.056	.065	-.088*
X4				1.000	.022	-.049	.046	-.071
X5					1.000	.021	.027	-.010
X6						1.000	.063	.754***
X7							1.000	-.416***
X8								1.000

Source: GDHS, 1988 data analyses.

Note:
X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05

Table A.5.12

CORRELATION MATRIX OF VARIABLES INCLUDED IN THE MODEL OF FERTILITY FOR THE REFERENCE GROUP FOR EVER-MARRIED WOMEN AGED 35-49, GHANA 1988

(N=295)

	X1	X2	X3	X4	X5	X6	X7	X8
X1	1.000	-.229***	-.057	-.144**	.169**	.497***	-.351	.655***
X2		1.000	.221***	.079	-.009	.089	.397***	-.229***
X3			1.000	.110*	-.061	.153**	.076	.017
X4				1.000	-.043	-.092*	.086	-.124**
X5					1.000	.133**	-.045	-.087
X6						1.000	.198***	.667***
X7							1.000	-.437***
X8								1.000

Source: GDHS, 1988 data analyses.

Note: X1= Children Ever Born.
X2= Respondent's Education.
X3= Current Place of Residence.
X4= Childhood Place of Residence.
X5= Husband's Occupational Status.
X6= Respondent's Age.
X7= Age at First Birth.
X8= Net Marital Duration.

*** p <.001; ** p <.01; * p <.05